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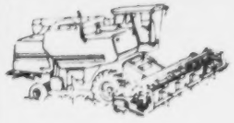

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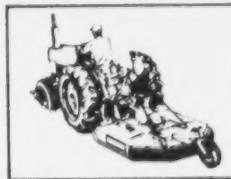

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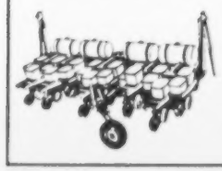

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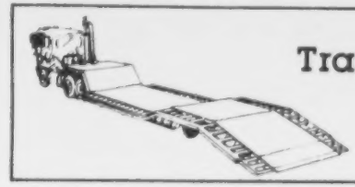

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Abbreviations:
DNA — Does not apply.
NA — Not available.
Std. — Standard.
Opt. — Optional
Linear measurements may be to nearest ¼-inch.

For addresses of manufacturers whose products are listed in this edition, refer first to advertiser's index and obtain address from advertisement. For non-advertisers and companies that do not show an address on their advertisement, refer to company name and address listing in I&T PRODUCT FILE (Annual October 31 issue).

IMPLEMENT & TRACTOR
Editorial, advertising and circulation correspondence should be addressed to: P.O. Box 1420, Clarksdale, Mississippi 38614
Telephone: 601/624-8503
Fax: 601/627-1977/1137

EDITORIAL
Scott Nesbitt, Editor
2120 W. 25th Street, Suite H
Lawrence, Kansas 66047-2954
Telephone: 913/841-7911
Fax: 913/749-0179

Hembree Brandon, Editorial Director
Ben Pryor, Managing Editor

CIRCULATION
Send change of address forms and circulation inquiries to:
Implement & Tractor
P.O. Box 1420
Clarksdale, Mississippi 38614

ADVERTISING
Darrah Parker, Production Manager
P.O. Box 1420
Clarksdale, Mississippi 38614
Telephone: 601/624-8503

Midwestern and Eastern Advertising Representative:
Thompson & Associates, Inc.
20 N. Wacker Dr., Suite 1221
Chicago, Illinois 60606
Telephone: 312/726-1020
Fax: 312/726-1380

Stockwell/Midwest
1900 Erie, Suite 203
North Kansas City, Missouri 64116
Telephone: 816/587-7484
Fax: 816/741-1925
Ray Stockwell

Haruki Hirayama
EMS, Inc.
Room 801, Shinjuku Komuro Bldg.
4-1-22, Shinjuku, Shinjuku-Ku
Tokyo 160 Japan
Phone: (03) 350-5666
Cable: EMSINCPEKIOO Tokyo
Telex: 2322520 EMSINC J

ADMINISTRATION
John L. Montandon, Publisher
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Nebraska Test Procedures

General

Tractors are tested at the University of Nebraska according to the Agricultural Tractor Test Code approved by the American Society of Agricultural Engineers and the Society of Automotive Engineers or official Nebraska test procedure.

The manufacturer selects the tractor to be tested and certifies that it is a stock model. Each tractor is equipped with the common power consuming accessories such as power steering, power lift pump, generator, etc., if available. Power consuming accessories may be disconnected only when the means for disconnecting can be reached from the operating station. An official representative of the company is present during the test to see that the tractor gives its optimum performance. Additional weight may be added to the tractor as ballast if the manufacturer recommends use of such ballast. The static tire loads and the tire inflation pressures must conform to the specifications of Tire and Rim Association.

Preparation for Test

The engine crankcase is drained and refilled with new oil conforming to specifications in the operator's manual. The operator's manual is also used as the guide for selecting the proper fuel and for routine lubrication and maintenance operations.

The tractor is limbered up for a minimum of three hours on the drawbar. Preliminary adjustments of the tractor is permitted at this time. Any parts added or replaced during the limber-up run, or any subsequent runs, are mentioned in the individual test reports. The tractor is equipped with approximately the amount of added ballast that is to be used during the drawbar runs.

PTO Performance

Power take-off performance runs are made by connecting the power take-off to a dynamometer. During a preliminary power take-off the manufacturer's representative may make adjustment for the fuel, ignition or injection timing and governor control settings. The settings must be maintained for the remainder of the test. The manually operated governor control mechanism is set to provide the high-idle speed specified by the manufacturer. During the power take-off runs an ambient air temperature of approximately 75 degrees F. (24.0 degrees C) is maintained.

Maximum power is obtained at the rated engine speed specified by the manufacturer with the governor control set for maximum power. This same setting is used for all subsequent PTO runs. Time of the run is two hours. Whenever the power take-off speed during the maximum power run differs from the speeds set forth in the ASAE and SAE standards, an additional run is made at either 540 or 1000 rpm of the power take-off shaft. Time of this run is one hour.

Drawbar Performance

Maximum drawbar power is shown for the normal field speed selected by the manufacturer. All engine adjustments are the same as those used in the power take-off runs. If the manufacturer specifies a different rated engine speed for drawbar operations, then the position of the manually operated governor control is changed to provide the high-idle speed specified.

Maximum drawbar power is determined within the following limits: (1) slip of the drivers must not exceed 15 percent for pneumatic tires on the concrete test course or 7 percent for steel cleats on the well packed earthen course; (2) ground speeds must not exceed 10 miles per hour; (3) safe stability limits of the tractor must not be exceeded; (4) no other operating limit of the tractor must be exceeded. Drawbar load is applied until the manufacturer's rated engine speed is obtained with maximum governor control lever setting. Travel speed, drawbar pull and other data are recorded over two 500-foot straight level areas.

Fuel consumption is determined at the manufacturer's selected travel speed with the drawbar pull set: (1) to give rated engine rpm; (2) 75 percent of the pull at rated engine rpm; (3) 50 percent of the pull at rated engine rpm; and (4) maintaining the same load and travel speed as in (3) by shifting to a higher gear and reducing the engine rpm.

This summary shows the drawbar horsepower, corresponding travel speed and duel consumption at 100 percent, 75 percent, or 50 percent loads, and 50 percent of pull at reduced engine speed.

Also shown is the maximum drawbar horsepower produced for two 500-foot travel sections and corresponding travel speed, the maximum drawbar pull and the corresponding drive-wheel slippage.

In addition, the "lugging ability" obtained by increasing the load so that the full throttle engine speed drops to 80 percent of rated is given as a percent increase with respect to the pull at rated engine rpm.

The maximum drawbar horsepower and the corresponding speed and drawbar pull for other selected gears or travel speeds are shown in the individual test reports.

Sound Measurement

Sound is recorded during each of the Drawbar Performance runs as the tractor travels on a straight section of the test course. The dB(A) sound level is obtained with the microphone located near the right ear of the operator. Bystander sound readings are taken with the microphone placed 25 feet (7.5 meters) from the line of travel of the tractor.

An increase of 10 dB(A) will approximately double the loudness to the human ear.

SUMMARY OF OECD TEST 1128—NEBRASKA SUMMARY 043
CASE INTERNATIONAL 9170 DIESEL
ALSO STEIGER PANTHER 1000 DIESEL
ALSO CASE INTERNATIONAL 9270 DIESEL
ALSO STEIGER 9270 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crankshaft speed rpm	Fuel Consumption Gal/hr (L/h)	lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/L)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1001 rpm)					
308.1 (229.9)	2099	16.9 (64.0)	0.395 (0.239)	18.23 (3.59)	
Maximum Power (2 hour test)					
330.2 (246.3)	1800	16.9 (64.1)	0.368 (0.224)	19.49 (3.84)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					79°F (26°C)
308.1 (229.9)	2099	16.9 (64.0)	0.395 (0.239)	18.23 (3.59)	
269.9 (201.3)	2155	15.5 (58.6)	0.413 (0.251)	17.37 (3.42)	Relative humidity
295.0 (155.0)	2190	13.2 (49.8)	0.460 (0.280)	15.57 (3.07)	21%
158.5 (101.2)	2217	9.6 (36.2)	0.496 (0.301)	14.48 (2.85)	Barometer
79.1 (52.5)	2247	7.0 (26.5)	0.716 (0.435)	10.05 (1.98)	30.30" Hg (102.1 kPa)
0.0 (0.0)	2292	4.5 (17.1)	4.669 (2.839)	1.54 (0.30)	

Maximum Torque 1176.5 lb·ft (1595 J/Nm) @ 1500 RPM
Maximum Torque Rise 53%

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull (lbf)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/L)	Temp °F (°C) Air	Temp °F (°C) Fuel	Barom. inch Hg (kPa)
75% of Full at Maximum Power—Five Hours 7th Gear									
256.55 (191.24)	14550 (65.65)	6.70 (10.78)	2140	3.05	0.470 (0.286)	15.11 (2.98)	140 (60)	82 (28)	29.90 (101.0)
MAXIMUM POWER IN SELECTED GEARS									
3rd Gear									
242.84 (181.16)	34980 (155.60)	2.65 (4.27)	2077	14.89	0.500 (0.304)	14.22 (2.80)	103 (40)	77 (25)	29.87 (101.0)
4th Gear									
258.39 (192.76)	34140 (151.86)	2.84 (4.57)	1801	14.17	0.477 (0.290)	14.90 (2.94)	107 (42)	82 (28)	29.87 (100.9)
5th Gear									
274.51 (204.79)	26810 (119.25)	3.84 (6.18)	1999	8.21	0.469 (0.285)	15.02 (2.96)	107 (42)	81 (27)	29.87 (100.9)
6th Gear									
279.79 (208.72)	21690 (96.50)	4.86 (7.82)	1901	5.75	0.440 (0.268)	16.15 (3.18)	105 (41)	79 (26)	29.87 (100.9)
7th Gear									
282.07 (210.42)	19100 (84.95)	5.54 (8.91)	1801	4.76	0.432 (0.263)	16.46 (3.24)	107 (42)	79 (26)	29.87 (100.9)
8th Gear									
281.48 (209.98)	15720 (69.93)	6.72 (10.81)	1802	3.75	0.420 (0.256)	16.92 (3.33)	107 (42)	79 (26)	29.87 (100.9)

Location of Test: J.I. Case Company, 3101 1st Avenue North, Fargo, North Dakota 58102

Dates of Test: April to July, 1987

Manufacturer: J.I. Case Company, 700 State Street, Racine, Wisconsin 53404 U.S.A.

FUEL AND OIL: Fuel No. 2 Diesel **Cetane No.** 40 min **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.859 **Fuel weight** 7.15 lbs/gal *(0.857 kg/l)* **Oil SAE** 15W40 **Oil Consumption for 10 hours** 0.15 lb *(70 gm)* **Transmission lubricant** Case IH transmission oil 02 7408T1 **Final drive lubricant** SAE 80W90 gear oil API GL-5

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 11385464 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.5" × 6.0" *(140 mm × 152 mm)* **Compression ratio** 14.5 to 1 **Displacement** 855 cu in *(14013 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type four wheel drive with duals **Serial No.** 17000706 **Tread width** rear 80" *(2032 mm)* and 157" *(3480 mm)* front 80" *(2032 mm)* and 157" *(3480)* **Wheel base** 141.5" *(3594 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 2.0 *(3.2)* second 2.5 *(4.0)* third 3.0 *(4.8)* fourth 3.7 *(5.9)* fifth 4.4 *(7.1)* sixth 5.5 *(8.9)* seventh 6.5 *(10.5)* eighth 7.8 *(12.5)* ninth 9.6 *(15.4)* tenth 11.7 *(18.8)* eleventh 14.1 *(22.7)* twelfth 17.5 *(27.8)* reverse 2.7 *(4.3)* 4.8 *(7.7)* **Clutch** multiple wet disc hydraulic all power actuated by foot pedal **Brakes** dual caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 2099 engine rpm **Unladen tractor mass** 33970 lbs *(15405 kg)* (with duals)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum sound level	79.6
Bystander in 12th gear	76.6

CENTER OF GRAVITY

Horizontal distance forward from centerline of rear wheels: 74.8" in *(1900 mm)*
Vertical distance above roadway: 53.8" in *(1366 mm)*
Horizontal distance from center of rear wheel (read 0" to the right hub)

TURNING ON A CONCRETE SURFACE

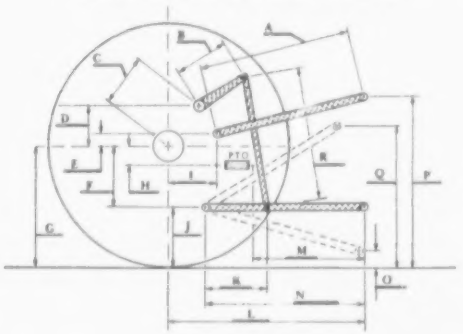
Turning radius—with duals right 276" *(7.01 m)* left 277" *(7.03 m)*
Turning space radius—with duals right 290" *(7.37 m)* left 289" *(7.35 m)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 23.1-34, 8-inner 18-(110)-outer 14-(96)	Four 23.1-34, 8-inner 14-(96)-outer 12-(82)
Ballast	—Liquid (total)	None	None
Front Tires	—No., size, ply & psi (kPa)	Four 23.1-34, 8-inner 18-(110)-outer 14-(96)	Four 23.1-34, 8-inner 14-(96)-outer 12-(82)
Ballast	—Liquid (total)	3580 lb (1624 kg)	None
Height of Drawbar		14.8 in (375 mm)	15.1 in (383 mm)
Static Weight	—Rear	16020 lb (7265 kg)	16020 lb (7265 kg)
	—Front	21890 lb (9745 kg)	17930 lb (8130 kg)
	—Total	37910 lb (17010 kg)	33950 lb (15405 kg)

THREE POINT HITCH PERFORMANCE (STATIC TEST)

CATEGORY: IV N
Quick Attach: None
Maximum Force Exerted Through Whole Range: 15990 lbs *(71.1 kN)*
i) Opening pressure of relief valve: SA
Sustained pressure at the compensator cutoff: 2531 psi *(175 Bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed: 31.0 GPM *(117.3 l/min)*
iii) Pump delivery rate at maximum hydraulic power: 27.1 GPM *(101.7 l/min)*
Delivery pressure: 2129 psi *(146 Bar)*
Power: 31.9 Hp *(25.1 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	30.5	774
B	21.0	533
C	27.8	706
D	23.7	601
E	11.0	280
F	13.6	345
G	32.2	818
H	2.9	74
I	21.0	535
J	18.6	473
K	25.7	652
L	51.1	1299
M	26.1	664
N	39.3	997
O	8.6	219
P	45.6	1158
Q	39.5	999
R	35.9	913

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The Case International 9170 is identical to the Steiger Panther 1000 (Cummins powered) except with regard to color and model designation.

The performance figures on this summary were taken from a test conducted under the OECD standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1128**, Nebraska Summary 043, May 20, 1988.

Report reissued. Supplemental permit for models Case International 9270 and Steiger 9270, May 25, 1991.

EUGENE LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Dale H. Vanderholm, Dean and Director

SUMMARY OF OECD TEST 1129—NEBRASKA SUMMARY 044
CASE INTERNATIONAL 9180 DIESEL
ALSO STEIGER LION 1000 DIESEL
ALSO CASE INTERNATIONAL 9280 DIESEL
ALSO STEIGER 9280 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel Consumption Gal/hr (kg/hr)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/kg)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1000 rpm)					
344.5 (257.0)	2099	19.0 (71.9)	0.395 (0.240)	18.14 (11.5)	
Maximum Power (2 hour test)					
363.5 (271.0)	1799	18.8 (71.1)	0.372 (0.226)	19.28 (11.8)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					84°F (29°C)
344.5 (257.0)	2099	19.0 (71.9)	0.395 (0.240)	18.14 (11.5)	
302.2 (225.4)	2167	17.6 (66.7)	0.418 (0.254)	17.15 (10.8)	Relative humidity
229.6 (171.3)	2195	14.5 (54.8)	0.448 (0.272)	16.01 (10.1)	24%
154.9 (115.6)	2221	11.4 (43.1)	0.527 (0.320)	13.61 (8.63)	Barometer
78.5 (58.6)	2252	8.0 (30.1)	0.735 (0.447)	9.76 (6.19)	30.98" Hg (104.6 kPa)
2.7 (2.0)	2302	5.4 (20.6)	14.545 (8.725)	0.51 (0.19)	

Maximum Torque 1234.8 lb ft (1674.2 Nm) @ 1500 RPM
Maximum Torque Rise 43%

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Gal/hr (l/h)	Temp °F (°C) coolant	eng. oil	Air disc bulb	Barom in Hg (kPa)
75% of Pull at Maximum Power—Five Hours 6th Gear										
286.42 (213.59)	17650 (78.51)	6.09 (9.80)	2160	4.02	0.480 (0.292)	14.87 (2.93)	180 (82)	190 (88)	64 (18)	30.17 (101.9)
MAXIMUM POWER IN SELECTED GEARS										
3rd Gear										
275.51 (205.38)	36050 (160.35)	2.87 (4.61)	2077	15.01	0.491 (0.298)	14.52 (2.86)	185 (84)	75 (24)	29.89 (101.9)	
4th Gear										
295.93 (220.76)	35670 (149.78)	3.50 (5.31)	1868	11.27	0.469 (0.271)	15.89 (3.13)	187 (86)	77 (25)	29.88 (101.9)	
5th Gear										
305.56 (227.80)	27440 (122.06)	4.17 (6.72)	1901	7.97	0.442 (0.269)	16.09 (3.17)	187 (86)	77 (25)	29.88 (101.9)	
6th Gear										
311.16 (232.13)	25540 (104.71)	4.79 (7.98)	1901	6.27	0.445 (0.265)	16.51 (3.22)	190 (88)	77 (25)	29.88 (101.9)	
7th Gear										
314.89 (234.91)	19710 (87.67)	5.99 (9.65)	1901	4.86	0.430 (0.262)	16.55 (3.26)	190 (88)	81 (27)	29.90 (101.9)	
8th Gear										
315.86 (235.63)	16390 (72.89)	7.23 (11.64)	1792	5.79	0.426 (0.259)	16.75 (3.30)	189 (87)	81 (27)	29.90 (101.9)	
9th Gear										
311.58 (232.29)	12240 (54.43)	9.55 (15.36)	1898	2.63	0.437 (0.266)	16.99 (3.21)	189 (87)	81 (27)	29.90 (101.9)	

Location of Test: J I Case Company, 3101 1st Avenue North, Fargo, North Dakota 58102

Dates of Test: April to August, 1987

Manufacturer: J I Case Company, 700 State Street, Racine, Wisconsin 53404 U S A

FUEL AND OIL: Fuel No 2 Diesel **Cetane No.** 40 min **Specific gravity converted to 60°/60°F** (15°/15°C) 0.859 **Fuel weight** 7.15 lbs/gal (0.857 kg/l) **Oil SAE** 15W40 **Oil Consumption for 10 hours** 0.09 lb (40 gm) **Transmission lubricant** Case 3H transmission oil 02 7408T1 **Final drive lubricant** SAE 80W90 gear oil API GL-5

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 11385474 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.5" × 6.0" (140 mm × 152 mm) **Compression ratio** 14.0 to 1 **Displacement** 855 cu in (14013 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type four wheel drive with duals **Serial No.** 17900712 **Tread width** rear 76.2" (1935 mm) and 132.3" (3360 mm) front 76.2" (1935 mm) and 132.3" (3360 mm) **Wheel base** 141.5" (3594 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 2.2 (3.5) second 2.6 (4.2) third 3.5 (5.7) fourth 4.0 (6.4) fifth 4.8 (7.7) sixth 6.0 (9.6) seventh 7.1 (11.4) eighth 8.5 (13.7) ninth 10.5 (16.9) tenth 12.8 (20.6) eleventh 15.4 (24.8) twelfth 19.0 (30.6) reverse 2.9 (4.7), 5.3 (8.5) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** dual caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 2099 engine rpm **Unladen tractor mass** 35570 lb (16140 kg) (with duals)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum sound level	81.0
Bystander in 12th gear	95.0

CENTER OF GRAVITY

Horizontal distance forward from centerline of rear wheels	75.5" in (1918 mm)
Vertical distance above roadway	55.9" in (1421 mm)
Horizontal distance from center of rear wheel tread 0" to the right/left	

TURNING ON A CONCRETE SURFACE

Turning radius—with duals right 271" (6.88 m) left 275" (6.99 m)
Turning space radius—with duals right 284" (7.20 m) left 288" (7.31 m)

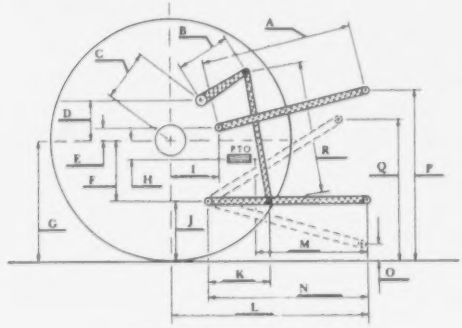
TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No. size, pts & psi (kPa)	Four 20.8-42, 18 inner 18 (124) outer 16 (110) Single	Four 20.8-42, 18 inner 14 (96) outer 12 (82) Single
Ballast	—Liquid (total)	4320 lb (1960 kg)	
Front Tires	—No. size, pts & psi (kPa)	Four 20.8-42, 18 inner 18 (124) outer 16 (110) Single	Four 20.8-42, 18 inner 14 (96) outer 12 (82) Single
Ballast	—Liquid (total)	4320 lb (1960 kg)	
Height of Drawbar		17.0 in (431 mm)	16.5 in (420 mm)
Static Weight	—Rear	16790 lb (7620 kg)	16790 lb (7620 kg)
	—Front	25100 lb (11640 kg)	18780 lb (8520 kg)
	—Total	59890 lb (18160 kg)	35570 lb (16140 kg)

THREE POINT HITCH PERFORMANCE (STATIC TEST)

CATEGORY IV-N
Quick Attach: None

Maximum Force Exerted Through Whole Range	16520 lbs (73.5 kN)
i) Opening pressure of relief valve	NA
Sustained pressure at the compensator cutoff	2531 psi (175 Bar)
ii) Pump delivery rate at minimum pressure and rated engine speed	51.0 GPM (193.1 l/min)
iii) Pump delivery rate at maximum hydraulic power	27.4 GPM (103.7 l/min)
Delivery pressure	2120 psi (146 Bar)
Power	33.9 Hp (25.3 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



Hitch Dimensions as Tested -- No Load

	inch	mm
A	30.5	774
B	21.0	533
C	27.8	706
D	23.7	601
E	11.0	280
F	13.6	345
G	35.0	889
H	2.9	74
I	21.0	533
J	21.4	544
K	25.7	652
L	51.1	1299
M	26.1	664
N	39.3	997
O	8.8	224
P	48.4	1230
Q	39.4	1001
R	37.6	956

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The Case International 9180 is identical to the Steiger Lion 1000 (Cummins powered) except with regard to color and model designation.

The performance figures on this summary were taken from a test conducted under the OECD standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1129**, Nebraska Summary 044, May 20, 1988.

Report reissued. Supplemental permit for models Case International 9280 and Steiger 9280, May 25, 1991.

LOUIS I LEVITICUS
Engineer-in-Charge

K VON BARGEN
R D GRISSO
G J HOFFMAN
Board of Tractor Test Engineers

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Dale H. Vanderholm, Dean and Director

SUMMARY OF OECD TEST 1251—NEBRASKA SUMMARY 078
FORD VERSATILE 276 DIESEL
HYDROSTATIC

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1025 rpm)					
106.7 (79.6)	2500	6.68 (25.3)	0.434 (0.264)	16.19 (3.19)	
VARYING POWER AND FUEL CONSUMPTION					
106.7 (79.6)	2509	6.68 (25.3)	0.434 (0.264)	16.19 (3.19)	Air temperature
96.9 (72.0)	2655	6.71 (25.4)	0.490 (0.298)	14.91 (2.82)	57°F (14°C)
75.2 (56.6)	2681	5.47 (20.7)	0.521 (0.317)	15.45 (2.65)	Relative humidity
48.9 (36.9)	2707	4.02 (15.1)	0.661 (0.402)	10.61 (2.09)	94%
24.5 (18.3)	2714	3.57 (13.5)	1.011 (0.615)	6.95 (1.37)	Barometer
1.9 (1.0)	2757	2.56 (9.7)	15.496 (9.426)	0.56 (0.11)	29.71" Hg (100.6 kPa)

Maximum Torque 520 Lb ft (714 f. Nm) at 1600 RPM
Maximum Torque Rise 23.1%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool wtg mani	Air dry bulb	Barom in Hg (kPa)
Maximum Power—1st Gear									
20.4 (15.2)	5260 (23.4)	5.01 (8.07)	2480	6.9	0.651 (0.396)	10.76 (2.12)	187 (86)	81 (27)	29.77 (100.8)
75% of Pull at Maximum Power—1st Gear									
60.9 (45.4)	5980 (17.7)	5.74 (9.24)	2674	5.9	0.656 (0.399)	10.66 (2.10)	185 (85)	75 (24)	29.77 (100.8)
50% of Pull at Maximum Power—1st Gear									
42.5 (31.7)	2655 (11.5)	6.02 (9.68)	2698	5.0	0.819 (0.498)	8.63 (1.70)	185 (85)	75 (24)	29.77 (100.8)
75% of Pull at Reduced Engine Speed—2nd Gear									
59.8 (44.6)	3955 (17.6)	5.66 (9.11)	1942	4.0	0.566 (0.344)	12.59 (2.44)	185 (85)	75 (24)	29.77 (100.8)
50% of Pull at Reduced Engine Speed—2nd Gear									
42.0 (31.3)	2630 (11.7)	5.99 (9.64)	1949	2.2	0.658 (0.400)	10.66 (2.10)	181 (83)	75 (24)	29.77 (100.8)

Location of Test: Prairie Agricultural Machinery Institute, P.O. Box 1060, Portage La Prairie, Manitoba, Canada R1N 3C5

Dates of Test: June 1989

Manufacturer: VERSATILE FARM EQUIPMENT OPERATIONS, Ford New Holland Canada Ltd, Box 7300, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3C 4E8

FUEL and OIL: **Fuel** No. 1 Diesel **Cetane** No. NA **Specific gravity converted to 60°/60°F (15°/15°C)** 0.85 **Fuel weight** 7.01 lb/gal *(0.84 kg/l)* **Oil SAE** 10W30 **Oil consumption for 10 hours** NA **Transmission lubricant** Versatile Hygear 23 **Hydrostatics lubricant** Dexron II ATF **Final drive lubricant** SAE 80W90 API GL-5

ENGINE: **Make** Ford Diesel **Type** four cylinder vertical with turbocharger **Serial No.** 36434 **Crankshaft** lengthwise **Rated engine speed** 2500 **Bore and stroke** 4.4" × 4.4" *(112 mm × 112 mm)* **Compression ratio** 17 to 1 **Displacement** 268 cu in *(4392 ml)* **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydrostatics oil **Fuel filter** one paper element and water separator **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: **Type** four wheel drive **Serial No.** 276-89-D432128 **Tread width** rear 63.4" *(1610 mm)* to 95.3" *(2421 mm)* front 63.4" *(1610 mm)* to 95.3" *(2421 mm)* **Wheel base** 86.0" *(2180 mm)* **Hydraulic control system** direct engine drive **Transmission** infinitely variable hydrostatic using a variable displacement pump and a fixed displacement motor, plus a three speed manual transmission **Nominal travel speeds mph (km/h)** forward 0.5-5.0 *(0.8-8.9)*, 0-7.7 *(0-12.4)*, 0-17.9 *(0-28.9)* reverse 0.5-5.0 *(0.8-8.9)*, 0-7.7 *(0-12.4)*, 0-17.9 *(0-28.9)* **Clutch** none **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 540 rpm at 2457 engine rpm or 1000 rpm at 2456 engine rpm **Unladen tractor mass** 9400 lb *(4272 kg)*

DRAWBAR PERFORMANCE
MAXIMUM POWER AT SELECTED SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool wtg mani	Air dry bulb	Barom in Hg (kPa)
1st Gear									
55.5 (25.0)	8895 (39.0)	1.6 (2.5)	2698	15.0	1.015 (0.616)	6.90 (1.36)	183 (84)	72 (22)	29.77 (100.8)
1st Gear									
45.7 (34.1)	7890 (35.1)	2.2 (3.5)	2667	15.0	0.858 (0.522)	8.17 (1.61)	183 (84)	72 (22)	29.77 (100.8)
1st Gear									
61.8 (46.1)	7465 (33.2)	3.1 (5.0)	2655	13.5	0.733 (0.446)	9.54 (1.88)	182 (83)	73 (23)	29.77 (100.8)
1st Gear									
71.2 (53.1)	6610 (29.4)	4.0 (6.5)	2531	10.8	0.655 (0.397)	10.71 (2.11)	182 (83)	73 (23)	29.77 (100.8)
1st Gear									
71.2 (53.1)	5375 (23.9)	5.0 (8.0)	2501	7.5	0.659 (0.399)	10.91 (2.15)	187 (86)	75 (24)	29.77 (100.8)
2nd Gear									
70.5 (52.6)	5330 (23.7)	5.0 (8.0)	2503	7.4	0.656 (0.399)	10.66 (2.10)	185 (85)	77 (25)	29.77 (100.8)
2nd Gear									
71.7 (53.5)	5395 (24.0)	5.0 (8.0)	2503	6.5	0.644 (0.392)	10.86 (2.14)	185 (85)	75 (24)	29.77 (100.8)
2nd Gear									
71.9 (53.6)	5685 (25.3)	7.5 (12.0)	2497	8.2	0.643 (0.391)	10.86 (2.14)	185 (85)	75 (24)	29.77 (100.8)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum sound level	85
Bystander	

DRAWBAR PERFORMANCE
MAXIMUM POWER AT SELECTED SPEEDS
(Ballasted Tractor)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool wtg mani	Air dry bulb	Barom in Hg (kPa)
1st Gear									
41.7 (31.1)	10050 (44.6)	1.6 (2.5)	2655	16.9	1.131 (0.688)	6.19 (1.22)	189 (87)	82 (28)	29.97 (101.5)
1st Gear									
54.2 (40.4)	9350 (41.6)	2.2 (3.5)	2680	17.2	0.852 (0.518)	8.22 (1.62)	189 (87)	82 (28)	29.97 (101.5)
1st Gear									
67.5 (50.3)	8140 (36.2)	3.1 (5.0)	2503	9.8	0.674 (0.410)	10.41 (2.05)	187 (86)	82 (28)	29.97 (101.5)
1st Gear									
72.8 (54.3)	6765 (30.1)	4.0 (6.5)	2497	7.1	0.646 (0.393)	10.81 (2.13)	187 (86)	82 (28)	29.97 (101.5)
1st Gear									
74.4 (55.5)	5530 (24.6)	5.0 (8.0)	2501	4.7	0.628 (0.382)	11.17 (2.20)	187 (86)	79 (26)	29.94 (101.4)
1st Gear									
72.7 (54.2)	5350 (23.8)	5.1 (8.2)	2495	5.8	0.635 (0.386)	11.01 (2.17)	187 (86)	79 (26)	29.94 (101.4)
2nd Gear									
71.5 (53.3)	5395 (24.0)	5.0 (8.0)	2495	4.6	0.626 (0.381)	11.17 (2.20)	187 (86)	77 (25)	29.91 (101.4)
2nd Gear									
74.2 (55.3)	6070 (27.0)	6.8 (11.0)	2501	2.1	0.692 (0.366)	11.02 (2.29)	189 (87)	81 (27)	29.91 (101.4)
2nd Gear									
74.0 (55.2)	5800 (25.9)	7.3 (11.8)	2502	1.7	0.693 (0.367)	11.62 (2.29)	189 (87)	81 (27)	29.91 (101.4)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data in accordance with official OECD test procedures. This tractor did not meet manufacturers 3 point lift capacity claim of 4400 lbs *(2000 kg)*. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1251**, Nebraska Summary 078, March 6, 1991.

LOUIS J. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

SUMMARY OF OECD TEST 1256—NEBRASKA SUMMARY 079
MASSEY FERGUSON 390T DIESEL
12 SPEED

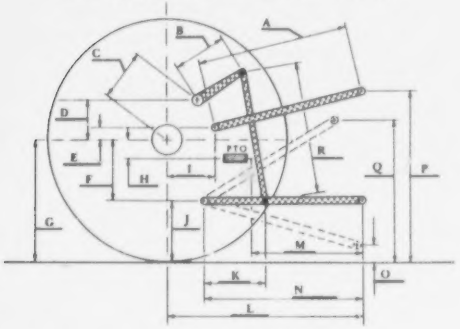
TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—Size, ply, & psi (kPa)	Two 16.9-28, 8, 18 (124)	Two 16.9-28, 8, 18 (124)
Ballast	—Liquid (total)	1065 lb (484 kg)	None
	—Cast Iron (total)	None	None
Front Tires	—Size, ply, & psi (kPa)	Two 16.9-28, 8, 18 (124)	Two 16.9-28, 8, 18 (124)
Ballast	—Liquid (total)	1520 lb (691 kg)	None
	—Cast Iron (total)	1441 lb (654 kg)	None
Height of Drawbar		29.5 in (750 mm)	29.7 in (755 mm)
Static Weight	Rear	5050 lb (2296 kg)	3965 lb (1802 kg)
	—Front	8401 lb (3818 kg)	3435 lb (1561 kg)
	—Total	13451 lb (6116 kg)	7400 lb (3372 kg)

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY II
Quick Attach: None

Maximum Force Exerted Through Whole Range	4045 lbs (18.0 kN)
a) Opening pressure of relief valve	NA
Sustained pressure at compensation cutoff	3000 psi (207 Bar)
a1) Pump delivery rate at minimum pressure and rated engine speed	31.5 GPM (119.2 l/min)
a2) Pump delivery rate at maximum hydraulic power	29.5 GPM (111.7 l/min)
Delivery pressure	2700 psi (186 Bar)
Power	46.3 Hp (34.7 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	24.2	615
B	12.4	315
C	20.4	518
D	19.7	500
E	15.7	400
F	0	0
G	25.0	635
H*	-4.7	-119
I	15.8	401
J	25.0	635
K	21.7	550
L	37.4	950
M	20.9	531
N	37.4	950
O	5.9	150
P	45.1	1145
Q	34.6	878
R	23.1	588

* PTO is above rear axle

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Darrell Nelson, Dean and Director

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crankshaft speed rpm	Fuel kg/h (kg/kW·h)	Fuel lb/hp·h (g/kW·h)	Fuel lb/gal (g/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—627 rpm)					
80.2 (59.8)	2197	19.1 (28.59)	0.473 (287.8)	16.29 (5.23)	
Standard Power Take-off Speed (540 rpm)					
75.1 (56.0)	1892	14.8 (22.12)	0.401 (244.0)	17.11 (5.49)	
VARYING POWER AND FUEL CONSUMPTION					
80.2 (59.8)	2197	19.1 (28.59)	0.473 (287.8)	16.29 (5.23)	Air temperature
68.7 (51.2)	2214	16.4 (24.49)	0.441 (268.2)	15.89 (5.10)	72°F (22°C)
51.8 (38.6)	2226	13.0 (19.46)	0.395 (240.3)	14.12 (4.53)	Relative humidity
34.7 (25.9)	2245	9.87 (14.83)	0.379 (230.7)	12.08 (3.88)	50%
17.4 (13.0)	2245	5.18 (8.28)	0.458 (278.6)	7.97 (2.56)	Barometer
—	2279	1.56 (3.46)	—	—	29.71" Hg (100.6 kPa)

Maximum Torque 233 lb ft (315.9 Nm) at 1303 RPM
Maximum Torque Rise 21%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp·h (g/kW·h)	Hp/lb/gal (kW/kg/l)	Temp °F (°C) coolant avg. (coolant max.)	Air dry (air bulb)	Barom inch Hg (kPa)
Maximum Power—9th (2HL) Gear									
65.2 (48.6)	1485 (15.5)	7.02 (11.29)	2202	5.1	0.538 (327.1)	12.99 (2.54)	180 (82)	63 (17)	29.80 (100.9)
75% of Pull at Maximum Power—9th (2HL) Gear									
49.6 (37.0)	2365 (11.8)	7.23 (11.63)	2225	3.4	0.500 (304.0)	12.08 (2.36)	178 (81)	63 (17)	29.80 (100.9)
50% of Pull at Maximum Power—9th (2HL) Gear									
34.1 (25.4)	1730 (17.2)	7.35 (11.83)	2227	2.1	0.629 (382.4)	10.30 (2.02)	176 (80)	63 (17)	29.80 (100.9)
75% of Pull at Reduced Engine Speed—10th (2HH) Gear									
49.8 (37.1)	2585 (11.5)	7.22 (11.62)	1758	5.4	0.498 (302.8)	13.01 (2.55)	178 (81)	63 (17)	29.80 (100.9)
50% of Pull at Reduced Engine Speed—10th (2HH) Gear									
33.9 (25.3)	1730 (17.2)	7.34 (11.81)	1762	2.1	0.559 (339.9)	12.19 (2.39)	176 (80)	63 (17)	29.80 (100.9)

Location of Test: AFRC Institute of Engineering Research, Wrest Park, Silsoe, Bedford, England MK45 4HS

Dates of Test: September to October 1989

Manufacturer: MASSEY FERGUSON MANUFACTURING Limited, Banner Lane, Coventry, Warwickshire, England CV4 9GF

FUEL and OIL: Fuel No. 2 Diesel **Cetane No.** 54.5 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8580 **Fuel weight** 6.977 lbs/gal (0.836 kg/l) **Oil SAE** 15W30 **Oil consumption for 10 hours** NA **Transmission lubricant** SAE 15W30 **Front axle lubricant** SAE 15W30

ENGINE: Make Perkins Diesel **Type** four cylinder vertical with turbocharger **Serial No.** AE4236U530575T **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 3.875" × 5.0" (98.5 mm × 127.0 mm) **Compression ratio** 15.5 to 1 **Displacement** 236 cu in (3870 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Fuel filter** one paper element and sediment bowl **Muffler** underhood **Exhaust** Vertical **Cooling medium temperature control** thermostat

CHASSIS: Type front wheel assist **Serial No.** 5724 P 253121 **Tread width** rear 59.1" (1500 mm) to 87.6" (2225 mm) front 58.7" (1490 mm) to 76.5" (1944 mm) **Wheel base** 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.22 (1.96) second 1.54 (2.48) third 1.82 (2.91) fourth 2.31 (3.71) fifth 3.34 (5.38) sixth 4.23 (6.81) seventh 4.97 (8.00) eighth 6.29 (10.13) ninth 7.46 (12.00) tenth 3.44 (15.19) eleventh 15.66 (21.99) twelfth 17.51 (27.85) reverse 1.82 (2.93), 2.51 (3.71), 7.46 (12.00), 9.44 (15.19) **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1895 engine rpm and 1000 rpm at 1900 engine rpm **Unladen tractor mass** 7365 lb (3330 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturers claim of 4250 lbs (1928 kg) hitch lift capacity. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

MAXIMUM POWER IN SELECTED GEARS
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool ing steel	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
				5th (SLL) Gear					
52.4 (39.1)	8855 (39.5)	2.88 (4.63)	2234	15.0	0.607 (0.369)	11.52 (2.27)	178 (81)	64 (18)	29.80 (100.9)
				6th (SLH) Gear					
60.3 (45.0)	6160 (27.4)	5.67 (9.12)	2202	12.5	0.580 (0.353)	12.08 (2.38)	180 (82)	64 (18)	29.80 (100.9)
				7th (HLL) Gear					
65.2 (48.6)	5575 (24.8)	6.81 (10.96)	2192	9.8	0.558 (0.339)	12.50 (2.46)	180 (82)	63 (17)	29.80 (100.9)
				8th (HLH) Gear					
64.1 (47.8)	4135 (18.4)	5.81 (9.35)	2189	6.5	0.582 (0.354)	12.70 (2.50)	180 (82)	63 (17)	29.80 (100.9)
				9th (2HL) Gear					
65.2 (48.6)	5485 (15.5)	7.02 (11.29)	2202	5.1	0.558 (0.339)	12.99 (2.56)	180 (82)	63 (17)	29.80 (100.9)
				10th (2HH) Gear					
63.5 (47.2)	2630 (11.7)	9.02 (14.52)	2200	3.5	0.551 (0.335)	12.93 (2.54)	180 (82)	63 (17)	29.80 (100.9)

TRACTOR SOUND LEVEL WITHOUT CAB	**dB(A)**
Maximum sound level	NA
Bystander in 12th (HHH) Gear	87

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool ing steel	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
				Maximum Power—9th (2HL) Gear					
64.1 (48.0)	5640 (16.2)	6.62 (10.66)	2203	8.5	0.595 (0.362)	12.79 (2.52)	178 (81)	61 (16)	30.15 (102.1)
				75% of Pull at Maximum Power—9th (2HL) Gear					
50.6 (37.8)	2745 (12.2)	6.89 (11.09)	2217	5.9	0.593 (0.361)	11.78 (2.32)	176 (80)	64 (18)	30.12 (102.0)
				90% of Pull at Maximum Power—9th (2HL) Gear					
54.5 (29.2)	1820 (8.1)	7.08 (11.40)	2227	4.0	0.609 (0.425)	10.98 (2.97)	178 (81)	64 (18)	30.12 (102.0)
				75% of Pull at Reduced Engine Speed—10th (2HH) Gear					
49.8 (37.1)	2760 (12.0)	6.98 (11.10)	1751	5.9	0.569 (0.346)	11.76 (2.31)	178 (81)	63 (17)	30.12 (102.0)
				90% of Pull at Reduced Engine Speed—10th (2HH) Gear					
54.2 (29.3)	1800 (8.0)	7.08 (11.40)	1756	4.0	0.561 (0.341)	12.91 (2.54)	176 (80)	63 (17)	30.12 (102.0)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool ing steel	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
				7th (HHL) Gear					
56.5 (42.0)	5655 (22.6)	4.19 (6.74)	2226	15.0	0.575 (0.350)	12.13 (2.39)	178 (81)	61 (16)	30.15 (102.1)
				8th (HHH) Gear					
62.5 (46.9)	4360 (19.1)	5.43 (8.74)	2202	11.5	0.561 (0.341)	12.39 (2.44)	180 (82)	61 (16)	30.15 (102.1)
				9th (2HL) Gear					
64.1 (48.0)	5640 (16.2)	6.62 (10.66)	2203	8.5	0.595 (0.362)	12.79 (2.52)	178 (81)	61 (16)	30.15 (102.1)
				10th (2HH) Gear					
63.5 (47.2)	2745 (12.2)	8.64 (13.91)	2204	5.9	0.561 (0.341)	12.89 (2.54)	180 (82)	63 (17)	30.12 (102.0)

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1265**, Nebraska Summary 079, March 6, 1991

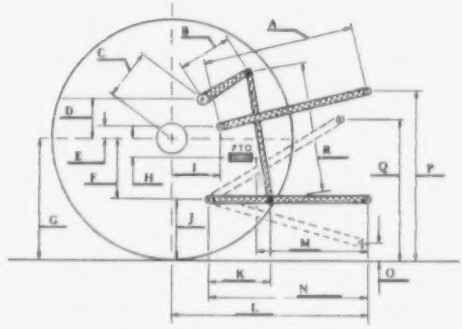
LOUISE LEVITICUS
Engineer in Charge

K. VON BARGEN
R. D. GRISSOM
G. J. HOFFMAN
Board of Tractor Test Engineers

TIRES AND WEIGHT		**Tested Without Ballast**
Rear Tires	—Size, size: psi & psi (kPa)	Two 18.9 x 30, R-1 (Ag)
Front Tires	—Size, size: psi & psi (kPa)	Two 11.2-24, R-1 (Ag)
Height of Drawbar		12.6 in. (315 mm) (19C1) 13.5 in. (345 mm) (20C1)
Static Weight	—Rear	6430 lb (2917 kg)
	—Front	3090 lb (1402 kg)
	—Total	9520 lb (4319 kg)

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY II	
Quick Attach: No	
Maximum Force Exerted Through Whole Range	4180 lbs (18.6 kN)
a) Opening pressure of relief valve	NA
Sustained pressure of the open relief valve	3335 psi (230 Bar)
a) Pump delivery rate at minimum pressure	8.5 GPM (31.6 l/min)
aa) Pump delivery rate at maximum hydraulic power	7.6 GPM (28.7 l/min)
Delivery pressure	2980 psi (200 Bar)
Power	12.9 Hp (9.6 kW)



	inch	mm
A	28.6	731
B	10.5	267
C	12.0	304
D	9.2	233
E	8.1	205
F	8.4	212
G	27.4	694
H	5.2	132
I	7.5	186
J	19.0	481
K	19.8	504
L	36.7	933
M	25.0	635
N	38.0	965
O	7.9	200
P	39.1	993
Q	32.8	833
R	26.2	666

HITCH DIMENSIONS AS TESTED—NO LOAD

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

SUMMARY OF OECD TEST 1287—NEBRASKA SUMMARY 077
CASE INTERNATIONAL 5140 DIESEL
24 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel/hr (l)	Bsfc lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Mode Atmosphere / Condition

MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—996 rpm)

97.6 (72.8)	2200	5.80 (21.97)	0.416 (0.253)	16.70 (4.29)	

Maximum Power (2 hours)

97.6 (72.8)	2150	5.77 (21.85)	0.411 (0.250)	16.90 (4.33)	

VARYING POWER AND FUEL CONSUMPTION

97.9 (72.9)	2200	5.80 (21.97)	0.416 (0.253)	16.70 (4.29)	Air temperature
66.6 (49.6)	2250	5.30 (20.06)	0.436 (0.265)	15.94 (4.14)	60°F (20°C)
64.2 (47.9)	2265	4.85 (18.36)	0.382 (0.233)	14.47 (3.83)	Relative humidity
65.2 (48.2)	2307	5.60 (21.61)	0.529 (0.322)	12.03 (3.13)	60%
22.0 (16.4)	2341	2.79 (10.57)	0.886 (0.538)	7.87 (2.55)	Barometer
—	2372	1.98 (7.51)	—	—	29.2" Hg (99.0 kPa)

Maximum Torque 505 lb ft (685 Nm) at 1210 RPM
Maximum Torque Rise 32%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch (kPa)
Maximum Power—19th (5N III) Gear									
81.0 (60.4)	6825 (21.66)	6.29 (10.13)	2196	5.5	0.505 (0.306)	13.76 (2.73)	174 (79)	59 (15)	29.2 (99.0)
75% of Pull at Maximum Power—19th (5N III) Gear									
64.0 (47.7)	5635 (16.12)	6.60 (10.62)	2265	3.8	0.552 (0.336)	12.58 (2.49)	174 (79)	59 (15)	29.2 (99.0)
50% of Pull at Maximum Power—19th (5N III) Gear									
45.7 (34.0)	2420 (10.77)	6.77 (10.89)	2291	2.5	0.655 (0.399)	10.66 (2.10)	174 (79)	59 (15)	29.2 (99.0)
75% of Pull at Reduced Engine Speed—20th (4N III) Gear									
63.0 (47.0)	5615 (16.09)	6.62 (10.65)	1854	5.9	0.511 (0.311)	13.55 (2.67)	174 (79)	59 (15)	29.2 (99.0)
50% of Pull at Reduced Engine Speed—20th (4N III) Gear									
45.6 (32.5)	2410 (10.71)	6.78 (10.91)	1854	2.6	0.582 (0.354)	11.95 (2.35)	174 (79)	59 (15)	29.2 (99.0)

Location of Test: DLG Testing Station for Agricultural Machinery, Max Eyth-Weg 1, D-6114 Gross Umstadt, Germany

Dates of Test: October 1989 to January 1990

Manufacturer: J.I. Case, Gmbh, D-4040, Neuss, Germany

FUEL and OIL: Fuel No. 2 Diesel **Cetane No.** NA **Specific gravity converted to 60°/60°F** (15°/15°C) 0.855 **Fuel weight** 6.95 lbs/gal (0.833 kg/l) **Oil SAE** 10W-30 **Oil consumption for 10 hours** NA **Transmission lubricant** Hy-Tran Plus Fluid **Front axle lubricant** SAE 85W140

ENGINE: Make Case Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 5211080(S) **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.016" × 4.724" (102 mm × 120 mm) **Compression ratio** 17.5 to 1 **Displacement** 359 cu in (5883 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underfloor **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type front wheel assist **Serial No.** JJJ 1088057 **Tread width** rear 60.2" (1530 mm) to 87.8" (2230 mm) front 60.2" (1530 mm) to 87.8" (2230 mm) **Wheel base** 101.8" (2585 mm) **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 0.17 (0.28) second 0.21 (0.34) third 0.26 (0.42) fourth 0.32 (0.52) fifth 0.40 (0.64) sixth 0.48 (0.78) seventh 0.60 (0.96) eighth 0.74 (1.19) ninth 1.20 (1.93) tenth 1.55 (2.34) eleventh 1.80 (2.89) twelfth 2.22 (3.58) thirteenth 2.75 (4.39) fourteenth 3.51 (5.32) fifteenth 4.09 (6.58) sixteenth 4.49 (7.22) seventeenth 5.06 (8.15) eighteenth 5.44 (8.75) nineteenth 6.72 (10.81) twentieth 8.55 (13.40) twenty-first 9.81 (15.79) twenty-second 11.89 (19.13) twenty-third 13.68 (23.63) twenty-fourth 18.20 (29.29) reverse 0.21 (0.34), 0.26 (0.42), 0.32 (0.52), 0.40 (0.64), 0.49 (0.79), 0.58 (0.93), 0.75 (1.18), 0.91 (1.46), 1.46 (2.35), 1.77 (2.85), 2.19 (3.52), 2.72 (4.37), 3.33 (5.36), 4.04 (6.50), 4.99 (8.03), 5.88 (9.82), 6.18 (9.95), 6.64 (10.68), 8.20 (13.20), 10.17 (16.36) **Clutch** wet multiple disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2165 engine rpm and 1000 rpm at 2200 engine rpm **Unladen tractor mass** 11055 lb (5015 kg)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch (kPa)
14th Gear (2N III)									
76.4 (57.0)	10135 (45.08)	2.85 (4.59)	2221	14.9	0.520 (0.316)	13.29 (2.82)	171 (77)	27 (-3)	29.4 (99.7)
15th Gear (5N III)									
79.8 (59.5)	8575 (38.14)	5.49 (8.82)	2148	11.5	0.506 (0.308)	13.65 (2.89)	174 (79)	27 (-3)	29.4 (99.7)
16th Gear (5N III)									
81.4 (60.7)	7770 (34.56)	5.93 (9.54)	2150	9.7	0.498 (0.303)	13.91 (2.74)	176 (80)	28 (-2)	29.4 (99.7)
17th Gear (4N III)									
81.1 (60.5)	6750 (30.03)	4.51 (7.25)	2150	8.5	0.498 (0.303)	13.91 (2.74)	176 (80)	28 (-2)	29.4 (99.7)
18th Gear (2N III)									
81.1 (60.5)	6225 (27.70)	3.88 (6.66)	2150	7.5	0.498 (0.303)	13.91 (2.74)	176 (80)	28 (-2)	29.4 (99.7)
19th Gear (5N III)									
81.4 (60.7)	6970 (31.01)	6.15 (9.89)	2150	5.6	0.498 (0.303)	13.96 (2.75)	174 (79)	28 (-2)	29.4 (99.7)
20th Gear (4N III)									
79.5 (59.3)	5850 (26.02)	7.74 (12.46)	2152	4.2	0.510 (0.310)	13.60 (2.68)	176 (80)	28 (-2)	29.4 (99.7)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum sound level	78.0	78.0
75% of Pull at Maximum Power	78.0	79.0
50% of Pull at Maximum Power	79.0	79.0
50% of Pull at Reduced Engine Speed	78.0	78.5
Bystander in 25th (5N IV) gear	86.0	—

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch (kPa)
16th Gear (5N III)									
75.9 (56.6)	7470 (33.23)	5.71 (9.19)	2216	15.0	0.549 (0.334)	12.64 (2.59)	172 (78)	30 (-2)	29.4 (99.6)
17th Gear (5N III)									
76.0 (56.7)	6915 (30.75)	8.13 (8.64)	2148	15.7	0.531 (0.323)	13.05 (2.67)	170 (80)	30 (-2)	29.4 (99.6)
18th Gear (2N III)									
77.4 (57.7)	6450 (28.69)	4.50 (7.24)	2150	12.7	0.523 (0.318)	13.25 (2.61)	178 (81)	30 (-1)	29.4 (99.6)
19th Gear (5N III)									
77.4 (57.7)	5945 (26.45)	5.75 (9.26)	2150	9.4	0.523 (0.318)	13.25 (2.61)	176 (80)	30 (-1)	29.4 (99.6)
20th Gear (4N III)									
76.7 (57.2)	5050 (22.46)	7.29 (11.73)	2150	7.3	0.528 (0.321)	13.15 (2.59)	178 (81)	30 (-1)	29.4 (99.6)

TIRES AND WEIGHT

		Tested Without Ballast
Rear Tires	—No. size ply & psi (kPa)	Two 18.9-38 R 18 (480)
Front Tires	—No. size ply & psi (kPa)	Two 13.9-28 R 12 (80)
Height of Drawbar		18.5 in (470 mm)
Static Weight	—Rear	6695 lb (3025 kg)
	—Front	4410 lb (2000 kg)
	—Total	11055 lb (5015 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data in accordance with official OECD test procedures. This tractor did not meet manufacturers 3 point lift capacity claim of 7700 lbs (3493 kg) or hydraulic pump flow of 20 l gpm (76 l/m). The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1287,** Nebraska Summary 077, March 6, 1991.

LOUIS F. LEVEILLEUX
Engineer-in-Charge

R. VON BARGEN
R. D. CRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

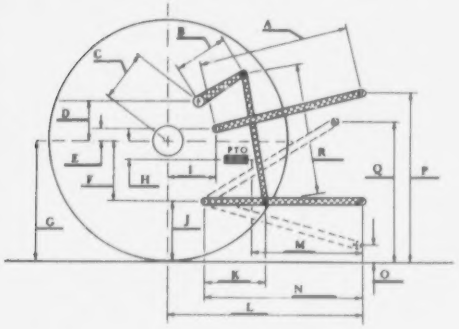
SUMMARY OF OECD TEST 1286—NEBRASKA SUMMARY 076
CASE INTERNATIONAL 5130 DIESEL
16 SPEED

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY: II
Quick Attach: None

Maximum Force Exerted Through Whole Range:	6720 lbs (29.9 kN)
i) Opening pressure of relief valve:	NA
Sustained pressure of the open relief valve:	2740 psi (189 Bar)
ii) Pump delivery rate at minimum pressure:	19.4 GPM (73.3 l/min)
iii) Pump delivery rate at maximum hydraulic power:	17.0 GPM (64.4 l/min)
Delivery pressure:	2250 psi (155 Bar)
Power:	22.5 Hp (16.6 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	29.7	755
B	9.1	230
C	11.9	301
D	7.1	181
E	6.3	160
F	9.7	246
G	31.3	795
H	3.8	96
I	14.1	359
J	21.6	549
K	21.9	555
L	43.6	1108
M	22.2	563
N	34.5	877
O	7.9	200
P	41.7	1059
Q	36.3	923
R	25.4	645

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Coll/hr (l/h)	Fuel/hr lb (kg/h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—996 rpm)					
89.9 (67.0)	2200	5.54 (20.96)	0.427 (0.260)	16.74 (3.20)	
VARYING POWER AND FUEL CONSUMPTION					
89.8 (67.0)	2200	5.54 (20.96)	0.427 (0.260)	16.24 (3.20)	Air temperature
78.6 (58.6)	2264	5.05 (19.12)	0.447 (0.272)	15.58 (3.07)	66°F (19°C)
59.8 (44.6)	2296	4.12 (15.61)	0.480 (0.292)	14.52 (2.86)	Relative humidity
40.2 (30.0)	2320	3.31 (12.53)	0.572 (0.348)	12.18 (2.40)	30%
20.4 (15.2)	2348	2.55 (9.58)	0.863 (0.525)	8.07 (1.59)	Barometer
—	2383	1.78 (6.71)	—	—	29.2" Hg (99.0 kPa)

Maximum Torque 261 lb ft (354 Nm) at 1299 RPM
Maximum Torque Rise 21.6%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool ing med	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—10th (2 III) Gear									
74.5 (55.6)	5925 (26.35)	4.70 (7.57)	2295	7.9	0.519 (0.316)	15.25 (2.61)	178 (81)	46 (8)	29.5 (99.2)
75% of Pull at Maximum Power—10th (2 III) Gear									
58.7 (43.8)	4430 (19.71)	4.97 (8.00)	2276	4.9	0.552 (0.336)	12.49 (2.66)	178 (81)	46 (8)	29.5 (99.2)
50% of Pull at Maximum Power—10th (2 III) Gear									
40.6 (30.3)	2955 (13.15)	5.15 (8.29)	2307	2.7	0.633 (0.385)	10.91 (2.15)	178 (81)	46 (8)	29.5 (99.2)
75% of Pull at Reduced Engine Speed—11th (5 III) Gear									
58.9 (43.9)	4445 (19.78)	4.96 (7.99)	1843	4.8	0.505 (0.307)	13.65 (2.69)	178 (81)	50 (10)	29.2 (98.8)
50% of Pull at Reduced Engine Speed—11th (5 III) Gear									
40.6 (30.3)	2970 (13.21)	5.14 (8.27)	1867	2.8	0.554 (0.337)	12.49 (2.46)	178 (81)	50 (10)	29.2 (98.8)

Location of Test: DLG Testing Station for Agricultural Machinery, Max-Eyth-Weg 1, D-6114 Gross Umstadt, Germany

Dates of Test: December 1989 to February 1990

Manufacturer: J.I. Case, Gmbh, D-4040, Neuss, Germany

FUEL and OIL: **Fuel** No. 2 Diesel **Cetane No.** NA **Specific gravity converted to 60°/60°F (15°/15°C)** 0.835 **Fuel weight** 6.95 lbs/gal *(0.833 kg/l)* **Oil SAE** 10W30 **Oil consumption for 10 hours** NA **Transmission lubricant** Hy Tran Plus Fluid **Front axle lubricant** SAE 85W140

ENGINE: **Make** Case Diesel **Type** six cylinder vertical **Serial No.** 52100627 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.016" × 4.724" *(102 mm × 120 mm)* **Compression ratio** 17.0 to 1 **Displacement** 359 cu in *(5883 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: **Type** front wheel assist **Serial No.** JJF 1000055 **Tread width** rear 60.2" *(1530 mm)* to 87.8" *(2230 mm)* front 60.2" *(1530 mm)* to 87.8" *(2230 mm)* **Wheel base** 101.8" *(2585 mm)* **Transmission** selective gear fixed ratio with partial (1) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.09 *(1.75)* second 1.32 *(2.12)* third 1.62 *(2.61)* fourth 2.01 *(3.24)* fifth 2.47 *(3.98)* sixth 3.00 *(4.82)* seventh 3.70 *(5.96)* eighth 4.06 *(6.54)* ninth 4.59 *(7.38)* tenth 4.93 *(7.93)* eleventh 6.08 *(9.79)* twelfth 7.54 *(12.14)* thirteenth 8.89 *(14.30)* fourteenth 10.77 *(17.33)* fifteenth 13.30 *(21.40)* sixteenth 16.49 *(26.53)* reverse 1.32 *(2.13)*, 1.60 *(2.58)*, 1.98 *(3.19)*, 2.45 *(3.95)*, 3.02 *(4.86)*, 3.66 *(5.89)*, 4.52 *(7.27)*, 4.96 *(7.98)*, 5.60 *(9.01)*, 6.02 *(9.68)*, 7.43 *(11.95)*, 9.20 *(14.81)* **Clutch** wet multiple disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2163 engine rpm and 1000 rpm at 2209 engine rpm **Unladen tractor mass** 10670 lb *(4840 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hr fuel (kg/kW h)	lb/hr gal (kW h/l)	Temp °F (°C) cool eng oil	Air dry bulb	Barom inch Hg (kPa)
				1st Gear (2 HI)					
69.6 (51.9)	39780 (17.55)	2.67 (4.29)	2238	15.1	0.554 (0.337)	12.48 (2.66)	176 (80)	88 (31)	29.2 (99.0)
				2nd Gear (3 HI)					
72.1 (53.8)	29865 (13.44)	3.40 (5.47)	2203	10.8	0.544 (0.325)	12.89 (2.54)	180 (82)	46 (8)	29.2 (99.0)
				3rd Gear (1 HI)					
73.0 (54.4)	7240 (32.21)	3.78 (6.08)	2198	9.5	0.529 (0.322)	13.05 (2.52)	178 (81)	45 (7)	29.3 (99.2)
				4th Gear (1 HI)					
73.5 (54.8)	6550 (28.24)	4.34 (6.99)	2201	7.9	0.524 (0.319)	13.15 (2.50)	180 (82)	46 (8)	29.2 (99.0)
				10th Gear (2 HI)					
74.3 (55.4)	5925 (26.15)	4.70 (7.57)	2203	7.0	0.519 (0.316)	13.25 (2.51)	178 (81)	46 (8)	29.3 (99.2)
				11th Gear (3 HI)					
74.9 (55.8)	6080 (20.82)	5.62 (9.52)	2201	5.0	0.523 (0.318)	13.20 (2.60)	180 (82)	46 (8)	29.3 (99.2)
				12th Gear (4 HI)					
72.0 (54.2)	3625 (16.13)	7.44 (11.95)	2201	3.6	0.536 (0.326)	12.84 (2.53)	178 (81)	46 (8)	29.3 (99.2)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum sound level	78.5	78.0
75% of Pull at Maximum Power	77.5	77.5
50% of Pull at Maximum Power	77.5	77.5
50% of Pull at Reduced Engine Speed	77.0	76.0
Bystander in 16th (4 HI) gear	87.5	–

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hr fuel (kg/kW h)	lb/hr gal (kW h/l)	Temp °F (°C) cool eng oil	Air dry bulb	Barom inch Hg (kPa)
				8th Gear (1 HI)					
67.2 (50.1)	7120 (31.68)	3.54 (5.69)	2240	15.1	0.570 (0.347)	12.08 (2.46)	176 (80)	52 (11)	29.3 (99.2)
				9th Gear (1 HI)					
69.5 (51.7)	6450 (28.68)	4.03 (6.49)	2198	12.6	0.556 (0.338)	12.39 (2.51)	178 (81)	52 (11)	29.3 (99.2)
				10th Gear (2 HI)					
70.4 (52.5)	6025 (26.80)	4.38 (7.05)	2198	11.5	0.549 (0.334)	12.59 (2.45)	180 (82)	52 (11)	29.3 (99.2)
				11th Gear (3 HI)					
70.9 (52.9)	4765 (21.19)	5.58 (8.99)	2198	8.6	0.548 (0.333)	12.60 (2.50)	178 (81)	52 (11)	29.3 (99.2)
				12th Gear (4 HI)					
69.9 (52.1)	3700 (16.45)	7.08 (11.40)	2198	6.6	0.552 (0.336)	12.49 (2.46)	180 (82)	52 (11)	29.1 (99.4)

TIRES AND WEIGHT		Tested Without Ballast
Rear Tires	—Size, inc. phs & psi (kPa)	Two 18.4-30, 6-14 (10)
Front Tires	—Size, inc. phs & psi (kPa)	Two 12.4-28, 6-14 (10)
Height of Drawbar		15.7 in (400 mm)
Static Weight	—Rear	6415 lb (2910 kg)
	—Front	4255 lb (1930 kg)
	—Total	10670 lb (4840 kg)

REMARKS: All test results were determined from observed data in accordance with official OECD test procedures. This tractor did not meet manufacturers 9 point lift capacity claim of 7700 lbs (3493 kg) or hydraulic pump flow of 20.1 gpm (76.1 l/m). The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1286**, Nebraska Summary 076, March 6, 1991.

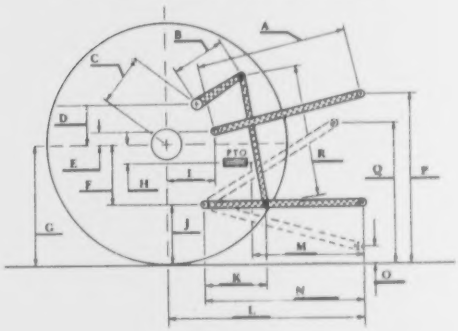
LOUIS I. LEVETICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOEHMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY II	
Quick Attach: None	
Maximum Force Exerted Through Whole Range	6135 lbs (27.1 kN)
a) Opening pressure of relief valve	N/A
Sustained pressure of the open relief valve	2725 psi (185 Bar)
a) Pump delivery rate at minimum pressure	19.1 GPM (72.4 l/min)
a) Pump delivery rate at maximum hydraulic power	17.2 GPM (65.1 l/min)
Delivery pressure	2220 psi (153 Bar)
Power	22.3 Hp (16.6 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	29.8	758
B	9.1	230
C	11.9	301
D	7.1	181
E	6.3	160
F	9.7	246
G	28.4	720
H	3.8	96
I	14.1	359
J	18.7	474
K	21.9	555
L	43.6	1108
M	22.2	563
N	34.5	877
O	7.9	201
P	38.7	984
Q	34.6	880
R	22.7	577

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

SUMMARY OF OECD TEST 1257—NEBRASKA SUMMARY 075
CASE INTERNATIONAL 5120 DIESEL
24 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	Brake hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—996 rpm)					
78.2 (58.3)	2200	4.76 (18.00)	0.422 (0.257)	16.45 (3.24)	
Maximum Power (2 hours)					
79.4 (59.2)	2150	4.74 (17.94)	0.416 (0.253)	16.75 (3.30)	
VARYING POWER AND FUEL CONSUMPTION					
78.2 (58.3)	2200	4.76 (18.00)	0.422 (0.257)	16.45 (3.24)	Air temperature
68.0 (50.7)	2249	4.29 (16.23)	0.439 (0.267)	15.84 (3.12)	70°F (21°C)
52.5 (39.0)	2305	3.63 (13.73)	0.483 (0.294)	14.42 (2.84)	Relative humidity
35.5 (26.5)	2332	2.95 (11.08)	0.577 (0.351)	12.03 (2.37)	54%
17.8 (13.3)	2365	2.23 (8.45)	0.870 (0.529)	7.97 (1.57)	Barometer
— —	2387	1.57 (5.95)	— —	— —	29.57 Hg (100.0 kPa)

Maximum Torque 245 lb ft (330 Nm) at 1501 RPM
Maximum Torque Rise 30.4%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Brake hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool avg. meas	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—17th (4N II) Gear									
64.4 (48.0)	5270 (23.27)	4.62 (7.43)	2201	6.7	0.515 (0.313)	13.50 (2.86)	180 (82)	45 (7)	29.4 (99.6)
75% of Pull at Maximum Power—17th (4N II) Gear									
50.8 (37.9)	9920 (17.43)	4.86 (7.82)	2267	4.7	0.509 (0.310)	12.84 (2.45)	180 (82)	45 (7)	29.4 (99.6)
50% of Pull at Maximum Power—17th (4N II) Gear									
35.4 (26.4)	2625 (11.68)	5.05 (8.13)	2316	3.0	0.641 (0.390)	10.86 (2.14)	180 (82)	45 (7)	29.4 (99.6)
75% of Pull at Reduced Engine Speed—18th (2N III) Gear									
51.0 (38.0)	5895 (17.55)	4.90 (7.89)	2134	4.7	0.514 (0.313)	13.05 (2.57)	178 (81)	46 (8)	29.4 (99.6)
50% of Pull at Reduced Engine Speed—18th (2N III) Gear									
35.4 (26.4)	2610 (11.61)	5.10 (8.20)	2181	5.0	0.616 (0.375)	11.27 (2.22)	178 (81)	46 (8)	29.4 (99.6)

Location of Test: DLG Testing Station for Agricultural Machinery, Max Eyth-Weg 1, D-6114 Gross Umstadt, Germany

Dates of Test: October to November 1989

Manufacturer: J.I. Case, Grubb, D-4040, Neuss, Germany

FUEL and OIL: Fuel No. 2 Diesel **Cetane** No. NA **Specific gravity converted to 60°/60°F** (15°/15°C) 0.855 **Fuel weight** 6.95 lbs/gal (0.833 kg/l) **Oil SAE** 10W30 **Oil consumption for 10 hours** NA **Transmission lubricant** Hy-Tran Plus Fluid **Front axle lubricant** SAE 85W140

ENGINE: Make Case Diesel **Type** four cylinder vertical with turbocharger and intercooler **Serial No.** 52100605 **C. aukshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.016" × 4.724" (102 mm × 120 mm) **Compression ratio** 16.5 to 1 **Displacement** 239 cu in (3922 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type front wheel assist **Serial No.** JJF 1000056 **Tread width** rear 60.2" (1530 mm) to 87.8" (2230 mm) front 60.2" (1530 mm) to 87.8" (2230 mm) **Wheel base** 92.9" (2385 mm) **Transmission** selective gear fixed ratio with partial 18 range operator controlled powershift **Nominal travel speeds mph (km/h)** first 0.17 (0.28) second 0.21 (0.34) third 0.25 (0.41) fourth 0.32 (0.51) fifth 0.39 (0.63) sixth 0.47 (0.76) seventh 0.58 (0.93) eighth 0.75 (1.17) ninth 1.17 (1.89) tenth 1.42 (2.29) eleventh 1.76 (2.83) twelfth 2.18 (3.51) thirteenth 2.68 (4.31) fourteenth 3.24 (5.22) fifteenth 4.01 (6.45) sixteenth 4.40 (7.08) seventeenth 4.96 (7.99) eighteenth 5.33 (8.58) nineteenth 6.50 (10.60) twentieth 8.17 (13.14) twenty first 9.61 (15.47) twenty second 11.65 (18.75) twenty third 14.40 (23.17) twenty fourth 17.84 (28.71) reverse 0.21 (0.34), 0.25 (0.41), 0.32 (0.51), 0.39 (0.63), 0.48 (0.77), 0.58 (0.93), 0.71 (1.15), 0.89 (1.43), 1.44 (2.31), 1.74 (2.80), 2.14 (3.45), 2.96, (4.28), 3.27 (5.26), 3.96 (6.37), 4.89 (7.87), 5.37 (8.64), 6.06 (9.75), 6.51 (10.47), 8.04 (12.94), 9.97 (16.04) **Clutch** wet multiple disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2165 engine rpm and 1000 rpm at 2209 engine rpm **Unladen tractor mass** 10540 lb (4780 kg)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Brake hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool avg. meas	Air dry bulb	Barom inch Hg (kPa)
15th Gear (1N II)									
55.8 (41.6)	9055 (40.27)	2.31 (3.72)	2240	15.0	0.502 (0.342)	12.99 (2.66)	180 (82)	43 (6)	29.5 (99.8)
16th Gear (2N II)									
62.6 (46.7)	8565 (38.09)	2.74 (4.41)	2152	15.2	0.528 (0.321)	13.20 (2.60)	181 (83)	45 (7)	29.5 (99.8)
17th Gear (3N II)									
64.5 (48.1)	6915 (30.75)	3.52 (5.66)	2148	9.6	0.513 (0.312)	13.55 (2.67)	181 (83)	46 (8)	29.5 (99.8)
18th Gear (4N III)									
65.5 (48.7)	6245 (27.79)	3.92 (6.31)	2152	8.5	0.508 (0.309)	13.71 (2.70)	180 (82)	46 (8)	29.4 (99.5)
17th Gear (4N II)									
65.2 (48.6)	5445 (24.22)	4.49 (7.22)	2150	7.2	0.510 (0.310)	13.65 (2.69)	181 (83)	46 (8)	29.5 (99.8)
19th Gear (2N III)									
64.9 (48.4)	5020 (22.33)	4.85 (7.80)	2150	6.4	0.511 (0.311)	13.60 (2.68)	181 (83)	46 (8)	29.5 (99.8)
18th Gear (3N III)									
65.2 (48.6)	4080 (17.80)	5.10 (8.82)	2154	4.6	0.510 (0.310)	13.60 (2.68)	180 (82)	46 (8)	29.4 (99.5)
20th Gear (1N III)									
63.2 (47.1)	3105 (13.81)	7.63 (12.28)	2148	3.6	0.526 (0.320)	13.25 (2.61)	180 (82)	46 (8)	29.4 (99.5)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum sound level	78.5	78.5
75% of Pull at Maximum Power	77.5	78.0
50% of Pull at Maximum Power	77.5	78.0
50% of Pull at Reduced Engine Speed	77.0	77.0
Bystander in 24th (4N IV) gear	84.0	—

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Brake hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool avg. meas	Air dry bulb	Barom inch Hg (kPa)
15th Gear (2N II)									
59.5 (16.8)	6710 (29.99)	2.75 (4.42)	2254	15.0	0.507 (0.307)	11.62 (2.29)	181 (83)	48 (9)	29.5 (99.8)
16th Gear (3N II)									
59.5 (44.2)	6720 (29.89)	3.31 (5.32)	2196	15.0	0.501 (0.303)	12.10 (2.44)	180 (82)	48 (9)	29.5 (99.8)
15th Gear (1N III)									
59.7 (44.5)	6165 (27.42)	3.63 (5.84)	2148	13.4	0.506 (0.306)	12.10 (2.39)	181 (83)	50 (10)	29.5 (99.8)
17th Gear (4N III)									
60.5 (45.1)	5410 (24.06)	4.17 (6.71)	2150	11.8	0.547 (0.331)	12.69 (2.50)	181 (83)	48 (9)	29.5 (99.8)
18th Gear (2N III)									
62.4 (46.5)	5195 (23.10)	4.51 (7.25)	2152	11.1	0.533 (0.324)	13.05 (2.57)	180 (82)	48 (9)	29.5 (99.8)
19th Gear (3N III)									
61.7 (46.0)	4030 (17.92)	5.74 (9.24)	2154	8.2	0.538 (0.327)	12.93 (2.55)	180 (82)	48 (9)	29.5 (99.8)
20th Gear (4N III)									
60.5 (45.1)	3120 (13.88)	7.27 (11.70)	2152	6.2	0.547 (0.333)	12.69 (2.50)	181 (83)	48 (9)	29.5 (99.8)

TIRES AND WEIGHT		Tested Without Ballast
Rear Tires	—Size, size, ply & psi (kPa)	Rear 15.5/38 R 16 (380)
Front Tires	—Size, size, ply & psi (kPa)	Front 12.4/11 R 28 (280)
Height at Drawbar		16.1 in (115 mm)
Static Weight	—Rear	6340 lb (2875 kg)
	—Front	4200 lb (1905 kg)
	—Total	10540 lb (4780 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data in accordance with official OECD test procedures. This tractor did not meet manufacturers 3 point lift capacity claim of 7700 lbs (3493 kg) or hydraulic pump flow of 20.1 gpm (76 l/m). The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1257,** Nebraska Summary 075, March 6, 1991.

LOUIS F. LEVEILLEUX
Engineer in Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

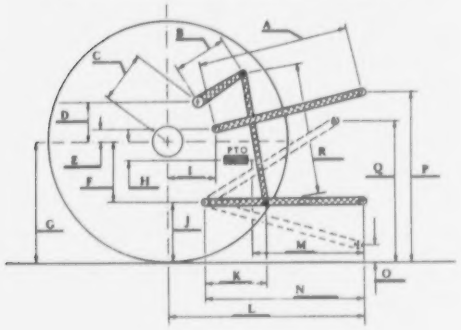
CATEGORY II
Quick Attach: None
Maximum Force Exerted Through Whole Range — 6250 lbs *(27.8 kN)*

i) Opening pressure of relief valve — NA
Sustained pressure of the open relief valve — 2715 psi *(187 Bar)*

ii) Pump delivery rate at maximum pressure — 18.8 GPM *(71.0 l/min)*

iii) Pump delivery rate at maximum hydraulic power — 16.7 GPM *(63.4 l/min)*
Delivery pressure — 2220 psi *(153 Bar)*
Power — 21.7 Hp *(16.2 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	29.7	755
B	9.1	230
C	11.9	303
D	7.1	181
E	6.3	160
F	9.7	246
G	29.3	745
H	3.8	96
I	14.1	359
J	19.6	499
K	21.9	555
L	43.6	1108
M	22.2	563
N	34.5	877
O	7.9	200
P	39.7	1009
Q	34.8	885
R	23.4	594

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

SUMMARY OF OECD TEST 1258—NEBRASKA SUMMARY 073
MASSEY FERGUSON 362 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crankshaft speed rpm	Gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—663 rpm)					
55.1 (41.1)	2196	3.46 (13.10)	0.459 (0.267)	15.94 (3.14)	
Standard Power Take-off Speed (539 rpm)					
51.8 (38.6)	1784	2.97 (11.26)	0.405 (0.245)	17.41 (3.43)	
VARYING POWER AND FUEL CONSUMPTION					
55.1 (41.1)	2196	3.46 (13.10)	0.459 (0.267)	15.94 (3.14)	Air temperature
47.6 (35.5)	2233	3.09 (11.70)	0.454 (0.276)	15.38 (3.03)	64°F *(18°C)*
35.7 (26.6)	2241	2.57 (9.74)	0.505 (0.306)	13.86 (2.73)	Relative humidity
24.1 (18.0)	2245	2.08 (7.86)	0.602 (0.366)	11.62 (2.29)	44%
12.1 (9.0)	2255	1.63 (6.16)	0.944 (0.574)	7.41 (1.46)	Barometer
—	2282	1.21 (4.57)	—	—	30.45" Hg *(103.1 kPa)*
—	—	—	—	—	

Maximum Torque 172.7 lb ft *(234.1 Nm)* at 1175 RPM
Maximum Torque Rise 50.8%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cooling med	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th (1H) Gear									
44.1 (32.9)	3215 (14.3)	5.14 (8.27)	2204	6.8	0.579 (0.352)	12.08 (2.56)	165 (74)	46 (8)	30.06 (101.8)
75% of Pull at Maximum Power—5th (1H) Gear									
34.3 (25.6)	2430 (10.8)	5.32 (8.56)	2253	4.5	0.625 (0.379)	11.22 (2.21)	158 (70)	45 (7)	30.06 (101.8)
50% of Pull at Maximum Power—5th (1H) Gear									
23.5 (17.4)	1620 (7.2)	5.45 (8.74)	2244	2.4	0.730 (0.444)	9.59 (1.89)	160 (71)	45 (7)	30.06 (101.8)
75% of Pull at Reduced Engine Speed—6th (2H) Gear									
34.1 (25.4)	2405 (10.7)	5.31 (8.55)	1523	4.5	0.535 (0.326)	13.15 (2.59)	158 (70)	45 (7)	30.06 (101.8)
50% of Pull at Reduced Engine Speed—6th (2H) Gear									
23.5 (17.5)	1620 (7.2)	5.45 (8.74)	1522	2.4	0.587 (0.357)	11.95 (2.35)	156 (69)	45 (6)	30.06 (101.8)

Location of Test: AFRC Institute of Engineering Research, West Park, Silsoe, Bedford, England MK45 4HS

Dates of Test: December 1989 to March 1990

Manufacturer: MASSEY FERGUSON MANUFACTURING Limited, Banner Lane, Coventry, Warwickshire, England CV4 9GF

FUEL and OIL: Fuel No. 2 Diesel **Cetane No.** 54.5 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8580 **Fuel weight** 6.977 lb/gal *(0.836 kg/l)* **Oil SAE** 15W30 **Oil consumption for 10 hours** NA **Transmission and hydraulic lubricant** SAE 15W50 **Front axle lubricant** SAE 15W30

ENGINE: Make Perkins Diesel **Type** four cylinder vertical **Serial No.** A4.236 LD311190 U5016231 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 3.878" × 5.0" *(98.5 mm × 127.0 mm)* **Compression ratio** 16 to 1 **Displacement** 236 cu in *(3870 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type front wheel assist **Serial No.** 5727 N 36194 **Tread width** rear 55.0" *(1398 mm)* to 75.1" *(1908 mm)* front 59.1" *(1502 mm)* **Wheel base** 87.0" *(2209 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph** *(km/h)* first 1.40 *(2.25)* second 2.05 *(3.30)* third 3.76 *(6.05)* fourth 4.61 *(7.42)* fifth 5.50 *(9.00)* sixth 8.20 *(13.20)* seventh 15.03 *(24.19)* eighth 18.45 *(29.69)* reverse 1.90 *(3.06)*, 7.61 *(12.25)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically power operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1789 engine rpm **Unladen tractor mass** 6175 lb *(2802 kg)*.

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant eng mani	Air dry bulb	Barom inch Hg (kPa)
				2nd Gear (2L)					
75.7 (79.2)	5555 (24.7)	1.71 (2.80)	2238	15.0	0.715 (0.435)	9.80 (1.93)	160 (71)	65 (18)	30.08 (101.8)
				3rd Gear (3L)					
62.2 (65.5)	6900 (30.8)	3.25 (5.20)	2200	12.1	0.600 (0.365)	11.62 (2.29)	165 (74)	65 (18)	30.08 (101.8)
				4th Gear (4L)					
47.5 (51.7)	8845 (39.7)	6.15 (9.60)	2205	8.6	0.598 (0.364)	11.67 (2.30)	165 (74)	65 (18)	30.08 (101.8)
				5th Gear (4H)					
66.1 (72.9)	5215 (23.3)	5.10 (8.23)	2204	8.6	0.529 (0.322)	12.08 (2.38)	165 (74)	66 (19)	30.08 (101.8)
				6th Gear (2H)					
63.3 (72.5)	2890 (9.3)	7.74 (12.46)	2210	9.6	0.581 (0.354)	11.88 (2.34)	163 (73)	66 (19)	30.08 (101.8)

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant eng mani	Air dry bulb	Barom inch Hg (kPa)
				Maximum Power—5th (3H) Gear					
61.4 (59.9)	5215 (54.1)	4.85 (7.80)	2200	10.0	0.507 (0.165)	11.74 (2.31)	167 (75)	52 (11)	30.18 (102.2)
				75% of Pull at Maximum Power—5th (3H) Gear					
52.7 (74.4)	2405 (10.7)	5.10 (8.23)	2242	6.5	0.651 (0.396)	10.76 (2.15)	165 (74)	52 (11)	30.18 (102.2)
				50% of Pull at Maximum Power—5th (3H) Gear					
72.9 (72.1)	1620 (7.2)	5.28 (8.50)	2254	9.5	0.755 (0.459)	9.29 (1.85)	163 (73)	52 (11)	30.18 (102.2)
				75% of Pull at Reduced Engine Speed—6th (2H) Gear					
52.9 (74.5)	2405 (10.7)	5.11 (8.22)	1524	6.5	0.582 (0.354)	12.03 (2.54)	163 (73)	50 (10)	30.18 (102.2)
				50% of Pull at Reduced Engine Speed—6th (2H) Gear					
72.8 (17.0)	1620 (7.2)	5.28 (8.50)	1536	9.5	0.592 (0.360)	11.83 (2.51)	160 (71)	50 (10)	30.18 (102.2)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant eng mani	Air dry bulb	Barom inch Hg (kPa)
				3rd Gear (3L)					
52.2 (24.0)	5890 (17.1)	3.11 (5.00)	2235	15.0	0.684 (0.416)	10.20 (2.01)	162 (72)	52 (11)	30.21 (102.3)
				4th Gear (4L)					
39.0 (29.1)	8865 (17.2)	3.79 (6.10)	2200	14.9	0.641 (0.390)	10.94 (2.15)	165 (74)	52 (11)	30.21 (102.3)
				5th Gear (4H)					
61.4 (59.9)	5215 (54.1)	4.85 (7.80)	2200	10.0	0.507 (0.165)	11.74 (2.31)	167 (75)	52 (11)	30.18 (102.2)
				6th Gear (2H)					
61.6 (59.6)	2070 (9.2)	7.86 (12.91)	2200	9.2	0.630 (0.171)	11.47 (2.26)	167 (75)	52 (11)	30.18 (102.2)

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum sound level	96.0	96.0
Bystander in 8th (4H) Gear	87.0	

TIRES AND WEIGHT — Tested Without Ballast

Rear Tires	—Size, size, ply & psi (kPa):	Firestone 18.4R38 x 34 (480)
Front Tires	—Size, size, ply & psi (kPa):	Firestone 11.2-28, 8, 36 (1100)
Height of Drawbar		9.1 in. (230 mm) (18D) 15.7 in. (400 mm) (29D)
Static Weight	—Rear —Front —Total	5650 lb (1682 kg) 2545 lb (1155 kg) 8175 lb (3902 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1258**, Nebraska Summary 073, March 6, 1991.

LOUIS F. LEVITICUS
Engineer-in-Charge

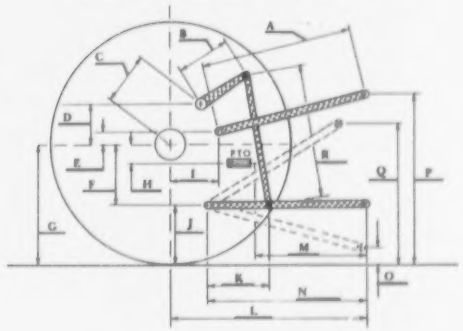
K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY II
Quick Attach: None

Maximum Force Exerted Through Whole Range	5865 lbs (17.2 kN)
a) Opening pressure of relief valve	N/A
Sustained pressure of the open relief valve	3500 psi (241 Bar)
a) Pump delivery rate at maximum pressure	6.9 GPM (18.6 l/min)
m) Pump delivery rate at maximum hydraulic power	4.6 GPM (17.4 l/min)
Delivery pressure	3050 psi (210 Bar)
Power	8.2 Hp (6.1 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	26.5	673
B	10.5	267
C	12.0	304
D	9.2	233
E	8.1	205
F	8.3	212
G	25.2	640
H	5.5	135
I	7.3	186
J	16.9	428
K	16.9	428
L	33.6	853
M	21.9	557
N	34.8	885
O	7.9	200
P	36.9	938
Q	34.2	868
R	23.8	605

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA TRACTOR TEST 1604—CASE INTERNATIONAL 685 DIESEL 16 SPEED ALSO 8 SPEED

CHASSIS SERIAL NUMBERS -B510232B018001- AND HIGHER (ALSO CASE INTERNATIONAL 695 DIESEL)

POWER TAKE-OFF PERFORMANCE (540 RPM SHAFT)

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (L/h)	lb/hp-hr (kg/kW-h)	Hp to gal (kW-h/L)	Temperature °F (°C): Cooling medium	Air out duct	Air in duct	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 606 rpm)								
61.02 (45.51)	2400	4.180 (15.824)	0.478 (0.291)	14.60 (2.878)	185 (85.0)	58 (14.5)	75 (23.8)	29.29 (99.06)
Standard Power Take-off Speed (540 rpm) — One Hour								
58.80 (43.85)	2141	3.984 (15.080)	0.475 (0.291)	14.76 (2.908)	188 (86.9)	58 (14.5)	75 (24.0)	29.30 (99.09)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
55.85 (40.16)	2401	3.772 (14.277)	0.489 (0.297)	14.27 (2.812)	194 (89.6)	58 (14.6)	75 (23.8)	
0.00 (0.00)	2660	1.927 (7.779)			178 (80.1)	58 (14.4)	75 (23.8)	
28.05 (20.92)	2597	2.542 (9.622)	0.632 (0.389)	11.05 (2.174)	181 (82.8)	58 (14.4)	76 (24.2)	
61.09 (45.55)	2401	4.128 (15.624)	0.471 (0.287)	14.80 (2.911)	190 (87.7)	58 (14.4)	75 (23.8)	
14.17 (10.57)	2627	2.066 (7.895)	1.027 (0.625)	6.79 (1.336)	178 (81.2)	58 (14.4)	75 (23.8)	
61.56 (45.90)	2550	3.999 (15.776)	0.524 (0.319)	13.50 (2.656)	193 (89.4)	58 (14.4)	75 (23.8)	
Av	**55.08**	**3554**	**7.651**	**0.605**	**11.56**	**182**	**58**	**75**	**29.29**
Av	(41.07)		(28.628)	(0.367)	(2.278)	(83.1)	(14.4)	(23.9)	(99.03)
DRAWBAR PERFORMANCE								
Maximum Available Power — Two Hours (10th(HDD) Gear								
52.90 (39.45)	2492 (23.31)	6.63 (25.07)	2599 (1.581)	4.62 (2.936)	4.174 (1.810)	0.951 (2.119)	12.66 (2.494)	187 (86.1)	54 (12.0)	52 (27.8)	28.97 (97.83)
75% of Pull at Maximum Power — Two Hours 10th(HDD) Gear								
62.25 (51.51)	2261 (10.15)	6.95 (26.31)	2485 (1.511)	5.57 (3.686)	5.564 (2.410)	0.569 (3.716)	11.86 (2.334)	184 (84.5)	56 (13.4)	62 (34.3)	28.91 (97.62)
50% of Pull at Maximum Power — Two Hours 10th(HDD) Gear								
29.24 (21.81)	1521 (6.77)	7.21 (27.30)	2551 (1.551)	2.87 (1.894)	2.939 (1.273)	0.701 (4.426)	9.95 (1.960)	184 (84.2)	54 (12.2)	57 (31.5)	28.91 (97.62)
50% of Pull at Reduced Engine Speed — Two Hours 12th(THDD) Gear								
29.20 (21.77)	1519 (6.76)	7.21 (27.30)	1569 (0.954)	2.85 (1.879)	2.980 (1.291)	0.569 (3.716)	12.27 (2.417)	185 (85.1)	55 (12.8)	58 (32.1)	28.87 (97.49)
MAXIMUM POWER IN SELECTED GEARS								
49.91 (37.22)	2307 (10.26)	5.98 (22.64)	2404 (1.461)	4.85 (3.081)	6th(21 DD) Gear	184 (84.2)	55 (12.8)	52 (28.9)	29.02 (98.26)
51.56 (38.45)	1660 (7.38)	2.89 (10.94)	2599 (1.581)	12.35 (7.844)	5th(9 TA) Gear	185 (84.7)	56 (13.0)	53 (29.4)	29.02 (98.26)
55.46 (41.35)	5551 (24.69)	5.61 (21.24)	2400 (1.459)	9.29 (5.901)	6th(9 DD) Gear	186 (85.2)	56 (13.0)	53 (29.5)	29.01 (98.24)
55.25 (41.20)	5125 (22.79)	5.00 (18.93)	2397 (1.457)	8.34 (5.297)	7th(9 TA) Gear	186 (85.3)	55 (12.8)	54 (29.8)	29.01 (98.24)
55.06 (41.06)	6153 (27.37)	4.79 (18.13)	2399 (1.458)	6.56 (4.167)	8th(9 DD) Gear	186 (85.3)	54 (12.6)	54 (29.8)	29.01 (98.24)
54.65 (40.74)	5727 (25.47)	5.42 (20.51)	2401 (1.459)	6.00 (3.811)	9th(THTA) Gear	186 (85.4)	52 (12.2)	55 (30.2)	29.00 (98.21)
55.81 (41.62)	5041 (22.42)	6.64 (25.13)	2402 (1.460)	4.66 (2.960)	10th(THDD) Gear	186 (85.4)	52 (12.2)	55 (30.2)	29.00 (98.21)
51.95 (38.73)	2142 (9.53)	9.04 (34.21)	2598 (1.578)	5.61 (3.564)	11th(2HTA) Gear	186 (85.4)	52 (12.2)	55 (30.2)	29.00 (98.21)

Department of Agricultural Engineering

Dates of Test: October 7 to 14, 1986

Manufacturer: J.I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: **Fuel** No. 2 Diesel **Cetane No.** 49.5 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** (15/15°C) 0.8378 **Fuel weight** 6.976 lbs/gal (0.836 kg/l) **Oil SAE** 30 **API service classification** SF/CD **To motor** 2.125 gal (8.044 l) **Drained from motor** 2.055 gal (7.778 l) **Transmission and final drive lubricant** Case IH Hytran fluid **Total time engine was operated** 40.0 hours

ENGINE: **Make** Case International Diesel **Type** four cylinder vertical **Serial No.** 2491D12D4828222* **Crankshaft** lengthwise **Rated rpm** 2400 **Bore and stroke** 5.875" × 5.067" (98.4 mm × 128.5 mm) **Compression ratio** 16 to 1 **Displacement** 239 cu in (3913 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** one thermostat

CHASSIS: **Type** standard **Serial No.** B510232B018063 **Tread width** rear 58" (1473 mm) to 100" (2540 mm) front 54" (1372 mm) to 79" (2007 mm) **Wheel base** 84.5" (2146 mm) **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center line of rear wheels 27.8" (706 mm) Vertical distance above roadway 30.8" (770 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left: **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.5 (2.4) second 1.8 (2.8) third 2.4 (3.8) fourth 2.9 (4.6) fifth 3.2 (5.2) sixth 3.9 (6.2) seventh 4.1 (6.6) eighth 5.0 (8.0) ninth 5.6 (9.0) tenth 6.8 (10.9) eleventh 9.1 (14.6) twelfth 11.0 (17.7) thirteenth 12.5 (19.8) fourteenth 14.8 (23.9) fifteenth 15.8 (25.5) sixteenth 19.1 (30.7) reverse 1.8 (2.8), 2.1 (3.4), 2.8 (4.6), 3.4 (5.5), 3.8 (6.2), 4.6 (7.5), 5.0 (8.0), 6.0 (9.6) **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 122' (3.10 m) left 122' (3.10 m) (on concrete surface without brake) right 155' (3.63 m) left 155' (3.63 m) **Turning space diameter** (on concrete surface with brake applied) right 252' (6.40 m) left 252' (6.40 m) (on concrete surface without brake) right 280' (7.11 m) left 280' (7.11 m) **Power take-off** 540 rpm at 2141 engine rpm and 1000 rpm at 2192 engine rpm **Unladen tractor mass** 5660 lb (2567 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 110°F (59.7°C). Eight gears were chosen between 15% slip and 10 mph (16.1 km/h). The performance figures on this report apply to chassis serial numbers -B510232B018001- and higher.

We, the undersigned, certify that this is an true and correct report of official Tractor Test No. **1604**, October 31, 1986.

NOTE: Report reissued, supplemental sales permit for Case International 695 Diesel, February, 1991.

LOUIS E. LEVITICUS
Engineer in Charge

K. VON BARGEN
L. E. BASHFORD
R. D. GRISSO, JR.
Board of Tractor Test Engineers

LUGGING ABILITY IN 10th(THDD) GEAR

Crankshaft Speed rpm	2492	2170	1920	1686	1448	1214
Pull—lbs (kN)	5041 (22.42)	5295 (23.55)	5345 (23.78)	5067 (22.53)	5040 (22.42)	5576 (24.80)
Increase in Pull %	0	5	17	23	20	18
Power—Hp (kW)	53.83 (40.13)	52.61 (39.08)	49.81 (37.15)	44.97 (33.54)	38.64 (28.66)	31.67 (23.61)
Speed—Mph (km/h)	6.64 (10.68)	5.97 (9.60)	5.27 (8.49)	4.60 (7.40)	3.96 (6.37)	3.32 (5.34)
Slip %	4.86	5.04	5.30	5.81	5.56	5.59

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power — Two Hours	97.0
75% of Pull at Maximum Power — Two Hours	96.0
50% of Pull at Maximum Power — Two Hours	93.5
50% of Pull at Reduced Engine Speed — Two Hours	91.5
Bystander in 15th (6HTA) gear	89.5

POWER TAKE-OFF PERFORMANCE (1000 RPM SHAFT)

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (L/h)	lb/hp-hr (kg/kW-h)	Hp to gal (kW-h/L)	Temperature °F (°C): Cooling medium	Air out duct	Air in duct	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1096 rpm)								
62.72 (46.77)	2401	5.189 (19.646)	0.470 (0.286)	14.85 (2.926)	186 (85.8)	62 (14.4)	75 (23.8)	28.95 (97.98)
Standard Power Take-off Speed (1000 rpm) — One Hour								
60.23 (44.92)	2192	4.902 (18.556)	0.464 (0.282)	15.05 (2.965)	187 (86.1)	62 (16.8)	75 (23.8)	29.04 (98.25)

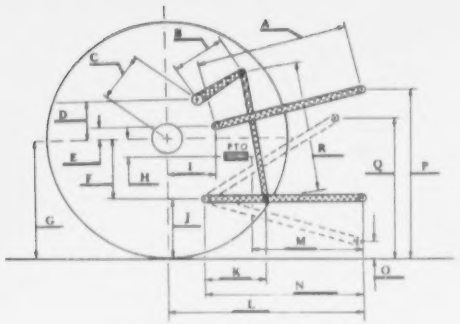
TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	Size, size, ply & psi (kPa)	Two 18.4×34 50 lb (124)	Two 18.4×34 50 lb (124)
Ballast	Liquid (each)	705 lb (320 kg)	None
	Cast Iron (each)	750 lb (340 kg)	None
Front Tires	Size, size, ply & psi (kPa)	Two 7.50×16 5 28 (193)	Two 7.50×16 5 28 (193)
Ballast	Liquid (each)	None	None
	Cast Iron (each)	50 lb (23 kg)	None
Height of Drawbar		18.5 in (470 mm)	18.5 in (470 mm)
Static Weight with Operator	Rear	6870 lb (3116 kg)	3960 lb (1796 kg)
	Front	3971 lb (1801 kg)	1877 lb (851 kg)
	Total	10841 lb (4917 kg)	5837 lb (2647 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2525	(17410)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	149	(65)
Location	final drive	

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	no		
CATEGORY	II		Not measured
LOAD lbs (kg)	3015	(1679)	
TIME sec	5.55		
HITCH POINT MOVEMENT in (mm)			
Lowest position	11.7	(294)	
Top of travel range	31.2	(800)	
Highest position	34.349	(871)	
LOAD CG MOVEMENT in (mm)			
Lowest position	10.1	(257)	
Top of travel range	34.4	(874)	
Highest position	38.7	(983)	

*Supplemental fuel capacity for transport purposes not specified by manufacturer.
** The observed power range 25.7 to 28.7 mm is less than the minimum power range for Cat. II, 28 in. (914 mm) specified by ASAE Standard S217.10.
*** The observed highest position 34.9 in. (871 mm) is less than the minimum height for highest position for Cat. II, 36 in. (914 mm) specified by ASAE Standard S217.10.



Hitch Dimensions as Tested — No Load

	inch	mm
A	24.8	629
B	11.8	298
C	11.6	295
D	11.3	288
E	9.0	229
F	7.5	191
G	26.5	667
H	0.3	6
I	11.0	279
J	18.8	476
K	21.8	554
L	35.9	911
M	19.9	505
N	32.1	815
O	8.0	203
P	37.8	959
Q	35.1	841
R	26.5	673

Case International 685 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1607—WHITE 160 DIESEL ALSO WHITE WORKHORSE 170 DIESEL 18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr per gal (kW h/l)	Cooling medium	Temperature °F (°C) Air over (wet bulb)	Air drive (wet bulb)	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1016 rpm)								
162.47 (121.15)	2200	9.259 (34.974)	0.595 (0.219)	17.59 (5.664)		185 (85.0)	62 (16.6)	75 (24.1)	28.69 (96.82)
Standard Power Take-off Speed (1000 rpm) — One Hour								
165.97 (123.76)	2167	9.535 (35.330)	0.580 (0.216)	17.78 (5.701)		185 (85.0)	61 (16.1)	75 (23.9)	28.69 (96.88)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
142.51 (106.17)	2271	8.565 (31.656)	0.606 (0.247)	17.02 (5.152)		182 (83.1)	61 (16.1)	74 (23.5)	
0.00 (0.00)	2589	2.816 (10.661)				177 (80.5)	62 (16.7)	75 (23.9)	
75.15 (54.55)	2324	5.320 (20.140)	0.503 (0.206)	13.75 (2.709)		180 (82.2)	62 (16.1)	75 (23.6)	
164.28 (122.50)	2199	9.215 (34.875)	0.588 (0.216)	17.85 (5.513)		184 (84.2)	62 (16.7)	76 (24.2)	
36.92 (27.55)	2385	4.092 (15.491)	0.766 (0.466)	9.02 (1.777)		177 (80.6)	62 (16.6)	75 (23.9)	
108.52 (80.71)	2294	6.708 (25.725)	0.454 (0.264)	15.34 (3.146)		180 (82.2)	62 (16.7)	76 (24.2)	
Av 87.50 (65.31)	2305	6.100 (23.095)	0.681 (0.293)	14.56 (2.828)		180 (82.1)	62 (16.5)	75 (23.8)	28.68 (96.86)

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr per gal (kW h/l)	Cool ing medium	Temp. °F (°C) Air over (wet bulb)	Air drive (wet bulb)	Barometer inch Hg (kPa)
Maximum Available Power — Two Hours 12th (4D) Gear											
140.57 (104.68)	8441 (37.55)	6.24 (10.04)	2201	2.55	9.086 (34.360)	0.647 (0.272)	15.65 (3.046)		183 (83.9)	69 (20.6)	66 (18.9)	28.92 (97.66)
75% of Pull at Maximum Power — Ten Hours 12th (4D) Gear											
111.86 (83.42)	6457 (28.63)	6.52 (10.49)	2284	1.75	7.800 (29.521)	0.682 (0.293)	14.34 (2.825)		185 (84.1)	55 (13.0)	70 (21.1)	28.81 (97.50)
50% of Pull at Maximum Power — Two Hours 12th (4D) Gear											
76.08 (56.74)	4291 (19.09)	6.65 (10.70)	2320	1.28	6.191 (23.436)	0.563 (0.342)	17.29 (3.672)		181 (82.8)	49 (14.4)	52 (10.8)	29.10 (98.49)
50% of Pull at Reduced Engine Speed—Two Hours 15th (5O) Gear											
76.07 (56.73)	4291 (19.09)	6.63 (10.70)	1647	1.28	5.199 (19.676)	0.672 (0.287)	14.65 (3.086)		181 (82.8)	48 (8.6)	53 (11.9)	29.07 (98.37)
MAXIMUM POWER IN SELECTED GEARS											
128.21 (95.61)	18055 (80.31)	2.66 (4.29)	2246	12.10	5th (2H) Gear				181 (82.9)	56 (13.2)	65 (18.1)	29.06 (98.33)
158.34 (103.16)	15667 (69.69)	5.51 (15.13)	2199	5.92	6th (2O) Gear				NA NA	64 (17.7)	55 (12.7)	28.97 (97.93)
159.18 (101.78)	15605 (69.42)	5.84 (9.17)	2200	4.46	7th (3L) Gear				182 (83.3)	64 (17.7)	55 (12.7)	28.97 (97.93)
142.57 (106.31)	11514 (50.31)	4.75 (7.65)	2199	5.55	8th (3D) Gear				182 (83.3)	64 (17.7)	55 (12.7)	28.97 (97.93)
140.63 (104.85)	10582 (46.18)	5.08 (8.17)	2200	5.15	9th (4L) Gear				182 (83.3)	66 (17.8)	59 (15.0)	28.98 (97.96)
159.22 (103.62)	9247 (41.13)	5.65 (9.09)	2200	2.71	10th (3O) Gear				183 (83.6)	66 (17.8)	59 (15.0)	28.98 (97.96)
140.55 (104.80)	8688 (38.64)	6.07 (9.76)	2199	2.62	11th (5L) Gear				182 (83.3)	66 (17.8)	59 (15.0)	28.98 (97.96)
142.74 (106.44)	8582 (38.17)	6.24 (10.04)	2202	2.54	12th (4D) Gear				182 (83.3)	68 (18.9)	65 (17.2)	28.96 (97.79)
158.81 (103.51)	7015 (31.19)	7.42 (11.95)	2200	2.11	13th (4O) Gear				182 (83.3)	66 (17.8)	59 (15.0)	28.98 (97.96)
142.60 (106.33)	7190 (31.98)	7.44 (11.97)	2201	1.93	14th (5D) Gear				182 (83.3)	66 (17.8)	59 (15.0)	28.98 (97.96)
157.54 (102.57)	5835 (25.94)	8.84 (14.21)	2199	1.67	15th (5O) Gear				182 (83.3)	66 (17.8)	59 (15.0)	28.98 (97.96)

Department of Agricultural Engineering

Dates of Test: April 5 to 19, 1988

Manufacturer: WHITE-NEW IDEA FARM EQUIPMENT COMPANY, Division of Allied Products, 125 West Sycamore Street, Coldwater, Ohio 45828

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 49.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8303 **Fuel weight** 6.913 lbs/gal *(0.828 kg/l)* **Oil SAE** 15W40 **API service classification** CC, CD/SD, SE, SF **To motor** 5.265 gal *(19.921 l)* **Drained from motor** 4.497 gal *(17.022 l)* **Transmission and powershift lubricant** WFF universal fluid **Front axle lubricant** SAE 90 gear lubricant API GL-5 **Total time engine was operated** 39.5 hours.

ENGINE: Make Consolidated Diesel Corporation-Cummins Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 44207046 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.49" × 5.52" *(114 mm × 135 mm)* **Compression ratio** 17.5 to 1 **Displacement** 504.5 cu in *(8270 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, separate radiators for transmission and powershift oils **Fuel filter** two paper elements and water separator **Fuel cooler** radiator for injection pump return fuel **Muffler** vertical **Cooling medium temperature control** two thermostats

CHASSIS: Type front wheel assist with duals **Serial No.** "401099-160E" **Tread width** rear 65" *(1651 mm)* to 126" *(3200 mm)* front 65" *(1651 mm)* to 82.5" *(2096 mm)* **Wheel base** 91" *(2311 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center line of rear wheels 54.2" *(867 mm)* Vertical distance above roadway 38.9" *(988 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled powershift **Advertised speeds mph** *(km/h)* first 1.8 *(2.9)* second 2.1 *(3.4)* third 2.5 *(3.7)* fourth 2.5 *(4.0)* fifth 2.8 *(4.5)* sixth 3.3 *(5.3)* seventh 3.8 *(6.1)* eighth 4.6 *(7.4)* ninth 4.9 *(7.9)* tenth 5.5 *(8.8)* eleventh 5.9 *(9.5)* twelfth 6.6 *(9.6)* thirteenth 7.1 *(11.4)* fourteenth 7.1 *(11.4)* fifteenth 8.5 *(13.7)* sixteenth 12.6 *(20.3)* seventeenth 15.3 *(24.7)* eighteenth 18.2 *(29.3)* reverse 2.0 *(3.2)*, 2.5 *(4.0)*, 3.0 *(4.8)*, 4.4 *(7.1)*, 5.4 *(8.7)*, 6.5 *(10.1)* **Clutch** dual dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 163.5" *(4.15 m)* **left** 163.5"

LUGGING ABILITY IN 12th (4D) GEAR

Crankshaft Speed rpm	2202	1985	1765	1546	1318	1100
Pull—lbs (kN)	8582 (38.17)	10283 (45.74)	11587 (51.54)	12220 (54.36)	11997 (53.37)	10649 (47.37)
Increase in Pull %	0	20	35	42	40	24
Power—Hp (kW)	142.74 (106.44)	159.26 (118.78)	152.56 (113.77)	140.70 (104.92)	117.77 (87.82)	87.74 (65.43)
Speed—Mph (km/h)	6.24 (10.04)	5.59 (8.99)	4.94 (7.95)	4.32 (6.95)	3.68 (5.92)	3.09 (4.97)
Slip %	2.54	2.96	3.64	5.07	5.97	8.36

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	77.5	76.5
75% of Pull at Maximum Power—Ten Hours		76.5
50% of Pull at Maximum Power—Two Hours		76.5
50% of Pull at Reduced Engine Speed—Two Hours		76.5
Bystander in 18th (6D) gear	86.5	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (L/h)	lb/hp hr (g/kW h)	lb/hr gal (kg/kW h)	Temp °F (°C) Cool ing med	Air ent bulb	Air dis bulb	Baromet in Hg (kPa)
Maximum Available Power — Two hours 12th (4D) Gear											
158.42 (105.22)	8442 (37.55)	6.15 (9.90)	2199	3.48	9.077 (34.361)	0.453 (0.276)	13.25 (3.004)	181 (82.2)	51 (10.6)	70 (20.8)	28.88 (97.52)
MAXIMUM POWER IN SELECTED GEARS											
113.41 (84.57)	13768 (61.24)	3.09 (4.97)	2272	14.76	5th (2D) Gear			181 (82.5)	58 (14.5)	67 (18.4)	29.08 (98.50)
142.52 (106.28)	8674 (38.58)	6.16 (9.92)	2201	5.44	12th (4D) Gear			182 (83.3)	48 (7.8)	58 (15.0)	28.98 (97.86)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 23.1R38, 6, 12 (85)	Four 20.8R38, 6, 12 (85)
Ballast	—Liquid (each)	None	None
	—Effect of front wt. (each)	90 lb. (41 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 18.4-26, 6, 28 (110)	Two 18.4-26, 6, 28 (110)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	900 lb. (410 kg)	None
Height of Drawbar		22.5 in. (570 mm)	22.5 in. (570 mm)
Static Weight with Operator	—Rear	11910 lb. (5402 kg)	12410 lb. (5629 kg)
	—Front	7660 lb. (3474 kg)	5060 lb. (2295 kg)
	—Total	19850 lb. (8550 kg)	17290 lb. (7843 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2275 (15690)
Location	remote outlet
Hydraulic oil temperature °F (°C)	161 (72)
Location	pump inlet

	Maximum Lift Capacity	
QUICK ATTACH	yes	
CATEGORY	III	
LOAD lbs (kg)	*7000	(3191)
TIME sec	5.42	
HITCH POINT MOVEMENT in (mm)		
Lowest position	14.1	(358)
Top of timed range	40.1	(1019)
Highest position	40.1	(1019)
LOAD CG MOVEMENT in (mm)		
Lowest position	14.0	(356)
Top of timed range	45.0	(1143)
Highest position	45.0	(1143)

*Manufacturers claim was 8000 lb (3628 kg)

(4.15 m) on concrete surface without brake) right 212.5° *(5.40 m)* left 212.5° *(5.40 m)* **Turning space diameter** (on concrete surface with brake applied) right 345.5° *(8.78 m)* left 345.5° *(8.78 m)* on concrete surface without brake) right 452.5° *(11.49 m)* left 452.5° *(11.49 m)* **Power take-off** 1000 rpm at 2167 engine rpm **Unladen tractor mass** 15610 lb *(7081 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

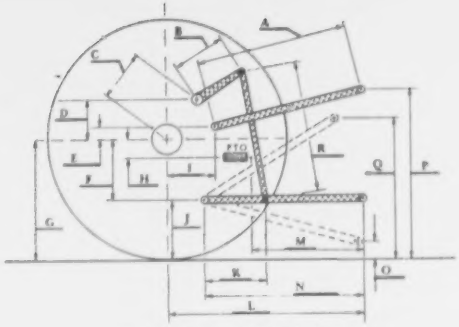
REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes of official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 130 °F (54°C). Eleven gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The pull in 5th (2D) gear was limited to avoid tractor bouncing.

We, the undersigned, certify that this is an true and correct report of official Tractor Test No. 1607, May 17, 1988.

Note: Report reissued, supplemental sales permit for White Workhorse 170 Diesel November, 1991.

LOUIS E. LEVEDAHL
Engineer-in-charge

R. VON BARGEN
R. D. GRISSO
L. E. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	in	mm
A	24.6	625
B	16.0	406
C	20.1	511
D	18.6	472
E	10.4	263
F	10.2	260
G	33.1	841
H	1.9	48
I	19.9	505
J	22.9	581
K	22.3	566
L	45.3	1151
M	49.9	1267
M	23.4	594
N	34.8	884
O	6.5	165
P	40.3	1175
Q	36.5	927
R	39.9	1013

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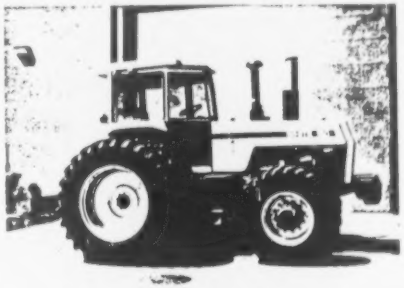
WHITE WORKHORSE 170 DIESEL
THREE POINT HITCH PERFORMANCE
(From Nebraska Tractor Test 1635)
DEUTZ ALLIS 9190 DIESEL

Observed Maximum Pressure psi (kPa)	2500 (17215)
Location	remote outlet
Hydraulic oil temperature °F (°C)	179 (82)
Location	hydraulic to/from line

	Maximum Lift Capacity			
QUICK ATTACH	No		Yes	
CATEGORY	III		III	
LOAD lbs (kg)	9000	(4450)	7966	(3613)
TIME sec	8.63		5.53	
HITCH POINT MOVEMENT in (mm)				
Lowest position	14.0	(356)	15.2	(435)
Top of timed range	*39.2	(996)	40.0	(1016)
Highest position	**39.2	(996)	40.2	(1021)
LOAD CG MOVEMENT in (mm)				
Lowest position	14.1	(357)	15.8	(337)
Top of timed range	40.7	(1033)	41.5	(1053)
Highest position	40.7	(1033)	41.7	(1058)

*The observed power range 25.2" (645 mm) does not meet the minimum power range 26.0" (660 mm) specified by ASAE Standard S217.10.

**The observed highest position 39.2" (996 mm) is less than the minimum height for highest position for Cat III, 40.0" (1016 mm) specified by ASAE Standard S217.10.



White 160 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA TRACTOR TEST 1608—FIELD BOSS 185 DIESEL
ALSO WHITE 185 DIESEL
ALSO WHITE WORKHORSE 195 DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (L/h)	lb/hp-hr (kg/kW h)	Hp-hr/gal (kW h/L)	Temperature °F (°C) Cooling medium	Air to air bulb	Air to dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO) Speed — 1015 rpm								
187.55 (139.85)	2200	10.923 (41.348)	0.405 (0.245)	17.17 (4.382)	184 (84)	63 (17)	75 (24)	29.04 (98.05)
Standard Power Take-off Speed (1000 rpm) — One Hour								
192.58 (143.63)	2167	11.086 (41.966)	0.398 (0.242)	17.55 (4.418)	183 (84)	63 (17)	76 (24)	29.02 (98.00)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
161.45 (120.39)	2227	9.682 (36.646)	0.415 (0.252)	16.68 (4.264)	192 (89)	61 (16)	76 (24)	
0.00 (0.00)	2368	3.059 (11.581)			178 (81)	61 (16)	75 (24)	
92.75 (69.16)	2280	6.139 (23.236)	0.514 (0.313)	13.45 (2.850)	180 (82)	61 (16)	77 (25)	
155.10 (115.67)	2199	10.103 (38.247)	0.393 (0.239)	17.50 (4.663)	183 (84)	63 (17)	78 (26)	
41.82 (31.19)	2312	5.665 (21.450)	0.771 (0.469)	8.97 (2.366)	179 (82)	62 (17)	77 (25)	
122.59 (91.41)	2254	7.794 (29.506)	0.440 (0.267)	15.73 (4.153)	181 (83)	62 (17)	77 (25)	
Av 99.65 (74.31)	2274	7.007 (26.525)	0.487 (0.296)	14.19 (3.746)	181 (83)	63 (17)	76 (24)	29.00 (97.86)

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (L/h)	lb/hp/hr (kg/kW h)	Hp-hr/gal (kW h/L)	Temp. °F (°C) Cool. med.	Air to air bulb	Air to dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 12th (4D) Gear											
163.56 (121.96)	9909 (44.08)	6.19 (9.96)	2201	5.04	10.755 (40.712)	0.455 (0.277)	15.21 (4.019)	182 (83)	61 (16)	70 (21)	29.07 (98.43)
75% of Pull at Maximum Power — Ten Hours 12th (4D) Gear											
125.43 (93.52)	7575 (33.70)	6.36 (10.23)	2240	2.67	8.957 (33.906)	0.392 (0.240)	14.31 (3.782)	182 (83)	58 (14)	77 (25)	29.67 (100.46)
50% of Pull at Maximum Power — Two Hours 12th (4D) Gear											
88.63 (66.09)	5417 (22.78)	6.50 (10.45)	2275	1.52	7.116 (26.940)	0.557 (0.339)	12.49 (3.300)	181 (82)	59 (15)	81 (26.8)	29.80 (100.89)
50% of Pull at Reduced Engine Speed — Two Hours 15th (5D) Gear											
88.82 (66.23)	5118 (22.76)	6.51 (10.47)	1618	1.52	5.903 (22.351)	0.463 (0.294)	14.92 (3.943)	181 (82)	60 (15)	82 (27.8)	29.76 (100.77)

MAXIMUM POWER IN SELECTED GEARS

152.55 (113.81)	18318 (81.48)	5.12 (8.24)	2205	11.51	6th (2D) Gear	180 (82)	56 (13)	61 (16)	29.09 (98.51)
161.45 (120.39)	16661 (74.11)	5.77 (9.07)	2201	8.07	7th (3D) Gear	181 (82)	61 (16)	69 (20.4)	29.11 (98.56)
165.54 (123.46)	15296 (68.03)	6.68 (10.74)	2201	4.29	8th (3D) Gear	181 (82)	61 (16)	69 (20.4)	29.11 (98.56)
165.85 (123.71)	12194 (54.24)	8.04 (12.93)	2201	5.71	9th (4D) Gear	181 (82)	63 (17)	55 (12.7)	29.11 (98.56)
163.55 (121.81)	10951 (48.62)	8.60 (13.82)	2201	3.29	10th (5D) Gear	181 (82)	63 (17)	55 (12.7)	29.11 (98.56)
162.51 (121.19)	10112 (44.98)	9.05 (14.56)	2200	5.04	11th (5D) Gear	182 (83)	63 (17)	55 (12.7)	29.11 (98.56)
167.72 (125.07)	10177 (45.27)	9.18 (14.95)	2198	5.12	12th (4D) Gear	182 (83)	63 (17)	54 (12.2)	29.12 (98.53)
163.09 (121.62)	8292 (36.88)	7.38 (11.87)	2201	2.53	13th (6D) Gear	181 (82)	63 (17)	55 (12.7)	29.11 (98.56)
166.53 (124.18)	8460 (37.63)	7.38 (11.88)	2200	2.61	14th (5D) Gear	181 (82)	63 (17)	55 (12.7)	29.11 (98.56)
159.50 (118.96)	6804 (30.26)	8.78 (14.13)	2201	2.01	15th (5D) Gear	181 (82)	63 (17)	54 (12.2)	29.12 (98.53)

Department of Agricultural Engineering

Dates of Test: April 5 to 18, 1988

Manufacturer: WHITE NEW IDEA FARM EQUIPMENT COMPANY, Division of Allied Products, 123 West Sycamore Street, Coldwater, Ohio 45828

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 49.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15.15°C)* 0.8305 **Fuel weight** 6.913 lbs/gal *(0.828 kg/l)* **Oil SAE** 15W40 **API service classification** CF-4, CD/SD, SE, **To motor** 5.511 gal *(20.106 l)* **Drained from motor** 4.778 gal *(18.088 l)* **Transmission and powershift lubricant** WFF universal fluid **Front axle lubricant** SAE 90 gear lubricant API GL-5 **Total time engine was operated** 38.5 hours

ENGINE: Make Consolidated Diesel Corporation-Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 41105714 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.19" × 5.92" *(114 mm × 135 mm)* **Compression ratio** 16.5 to 1 **Displacement** 500.5 cu in *(8220 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, separate radiators for transmission and powershift oils **Fuel filter** two paper elements and water separator **Fuel cooler** radiator for injection pump return fuel **Muffler** vertical **Cooling medium temperature control** two thermostats

CHASSIS: Type front wheel assist with duals **Serial No.** *"*101029-1858*"* **Tread width** rear 65" *(1651 mm)* to 126" *(3200 mm)* front 65" *(1651 mm)* to 82.5" *(2096 mm)* **Wheel base** 91" *(2311 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 34.6" *(880 mm)* Vertical distance above roadway 38.9" *(988 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial 3% range operator controlled powershift **Advertised speeds mph** *(km/h)* first 1.8 *(2.9)* second 2.1 *(3.4)* third 2.5 *(3.7)* fourth 2.5 *(4.0)* fifth 2.8 *(4.5)* sixth 3.3 *(5.3)* seventh 3.8 *(6.1)* eighth 4.6 *(7.4)* ninth 4.9 *(7.9)* tenth 5.5 *(8.8)* eleventh 5.9 *(9.5)* twelfth 6.0 *(9.6)* thirteenth 7.1 *(11.4)* fourteenth 7.1 *(11.4)* fifteenth 8.5 *(13.7)* sixteenth 12.6 *(20.3)* seventeenth 15.3 *(24.7)* eighteenth 18.2 *(29.3)* reverse 2.0 *(3.2)*, 2.5 *(4.0)*, 3.0 *(4.8)*, 4.4 *(7.1)*, 5.4 *(8.7)*, 6.5 *(10.1)* **Clutch** dual dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 163.5" *(4.15 m)* left 163.5" *(4.15 m)* (on concrete surface without brake) right 212.5" *(5.40 m)* left 212.5" *(5.40 m)* **Turning space diameter** (on concrete surface with brake applied) right 345.5" *(8.78 m)* left 345.5" *(8.78 m)* (on concrete surface without brake) right 452.5" *(11.49 m)* left 452.5" *(11.49 m)* **Power take-off** 1000 rpm at 2167 engine rpm **Unladen tractor mass** 15545 lb *(7051 kg)*

LUGGING ABILITY IN 12th (4D) GEAR

Crankshaft Speed rpm	2198	1975	1757	1543	1312	1102
Pull—lbs (kN)	10177 (45.27)	12526 (55.71)	13926 (61.95)	14427 (64.17)	13569 (60.35)	11794 (52.46)
Increase in Pull %	0	23	37	42	33	16
Power—Hp (kW)	167.72 (125.07)	181.15 (135.07)	180.85 (134.86)	164.08 (122.36)	131.67 (98.19)	96.79 (72.18)
Speed—Mph (km/h)	6.18 (9.95)	5.51 (8.87)	4.87 (7.84)	4.27 (6.86)	3.64 (5.86)	3.00 (4.83)
Slip %	5.12	5.79	6.45	6.62	6.12	5.79

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	77.0	76.5
75% of Pull at Maximum Power—Ten Hours		76.5
50% of Pull at Maximum Power—Two Hours		76.5
50% of Pull at Reduced Engine Speed—Two Hours		75.5
Bystander in 10th (6D) gear	87.5	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	%	Fuel Consumption gal/hr (L/h)	lb/hp/hr (kg/kW h)	Hp-hr/gal (kW h/L)	Temp. °F (°C) Cool. med.	Air to air bulb	Air to dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two hours 12th (4D) Gear											
163.55 (121.81)	10062 (44.76)	6.09 (9.80)	2200	4.28	10.741 (40.654)	0.455 (0.277)	15.21 (4.019)	182 (83)	60 (15.6)	61 (16.1)	29.02 (97.99)
MAXIMUM POWER IN SELECTED GEARS											
155.66 (116.05)	14197 (63.16)	5.46 (8.79)	2225	14.29	7th (3) 3 Gear			181 (82.5)	56 (13.2)	61 (15.6)	29.09 (98.25)
166.82 (124.37)	10229 (45.50)	6.10 (9.82)	2200	4.05	12th (4D) Gear			181 (82.8)	63 (16.1)	54 (12.2)	29.12 (98.33)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—Size, size, rib & psi (kPa)	Four 20.8R38, 8, 12 (85)	Four 20.8R38, 8, 12 (85)
Ballast	—Liquid (each)	None	None
	—Effect of front axle (each)	29 lb (13 kg)	None
Front Tires	—Size, size, rib & psi (kPa)	Two 18.4-26, 8, 16 (110)	Two 18.4-26, 8, 16 (110)
Ballast	—Liquid (each)	None	None
	—Cast iron (each)	965 lb (437 kg)	None
Height of Drawbar		22 in (560 mm)	22 in (560 mm)
Static Weight with Operator	—Rear	19685 lb (8930 kg)	11250 lb (5103 kg)
	—Front	7855 lb (3564 kg)	5960 lb (2704 kg)
	—Total	27540 lb (12494 kg)	17210 lb (7807 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2275	(15690)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	164	(73)
Location	pump inlet	
	Maximum Lift Capacity	
QUICK ATTACH	yes	
CATEGORY	III	
LOAD lbs (kg)	*20935	(9192)
TIME sec	7.56	
HITCH POINT MOVEMENT in (mm)		
Lowest position	13.0	(331)
Top of travel range	30.9	(1013)
Highest position	40.0	(1016)
LOAD CG MOVEMENT in (mm)		
Lowest position	12.9	(328)
Top of travel range	45.1	(1146)
Highest position	45.3	(1151)

*Manufacturer's limit was 9000 lbs (4426 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

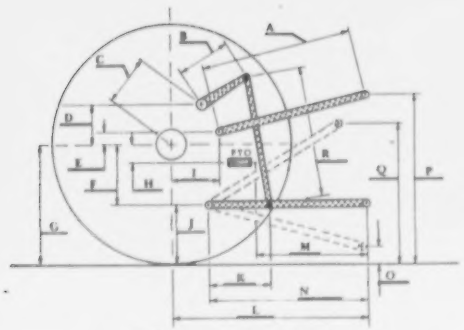
REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 126 °F (52.2°C). Ten gears were chosen between 15% slip and 10 mph (16.1 km/h). The pull in 6th (2D) gear was limited to avoid tractor bouncing.

We, the undersigned, certify that this is an true and correct report of official Tractor Test No. **1608**, May 17, 1988.

Note: Report reissued, supplemental tables permit for White Workhorse 195 Diesel November, 1991.

LOUIS T. LEVITICUS
Engineer in charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	24.5	622
B	16.0	406
C	20.1	511
D	18.6	472
E	10.4	263
F	10.2	260
G	33.1	841
H	1.9	48
I	19.9	505
J	22.9	581
K	22.3	566
L	53.5	1351
S	49.9	1267
M	23.4	594
N	34.8	884
O	6.5	165
P	46.3	1175
Q	36.3	923
R	39.9	1013

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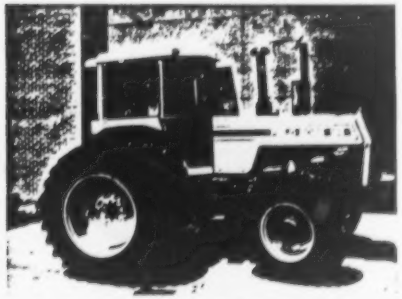
WHITE WORKHORSE 195 DIESEL
THREE POINT HITCH PERFORMANCE
(From Nebraska Tractor Test 1635)
DEUTZ ALLIS 9190 DIESEL

Observed Maximum Pressure psi (kPa)	2500 (17235)
Location	remote outlet
Hydraulic oil temperature °F (°C)	179 (82)
Location	hydraulic suction line

	Maximum Lift Capacity			
QUICK ATTACH	No		Yes	
CATEGORY	III		III	
LOAD lbs (kg)	9600	(4400)	7900	(3613)
TIME sec	8.63		5.55	
HITCH POINT MOVEMENT in (mm)				
Lowest position	14.0	(356)	15.2	(335)
Top of timed range	*39.2	(996)	40.0	(1016)
Highest position	**39.2	(996)	40.2	(1021)
LOAD CG MOVEMENT in (mm)				
Lowest position	13.1	(357)	15.5	(317)
Top of timed range	40.7	(1033)	41.5	(1054)
Highest position	40.7	(1033)	41.7	(1059)

*The observed power range 25.2" (645 mm) does not meet the minimum power range 26.0" (660 mm) specified by ASAE Standard S217.10.

**The observed highest position 39.2" (996 mm) is less than the minimum height for highest position for Cat III, 40.0" (1016 mm) specified by ASAE Standard S217.10.



Field Boss 185 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA TRACTOR TEST 1615—WHITE 120 DIESEL
ALSO WHITE WORKHORSE 125 DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (L/h)	lb/hp·hr (g/kW·h)	Hp·hr per gal (kW·h/L)	Cooling medium	Temperature °F (°C) Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1016 rpm)								
119.15 (88.83)	2200	7.105 (26.887)	0.412 (0.251)	16.77 (3.700)	air	187 (86.2)	66 (18.8)	74 (23.6)	28.96 (97.78)
Standard Power Take-off Speed (1000 rpm) — One Hour								
121.94 (90.93)	2166	7.198 (27.248)	0.408 (0.248)	16.94 (3.737)	air	187 (86.2)	67 (19.4)	78 (25.5)	28.95 (97.76)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
105.48 (77.57)	2248	6.458 (24.372)	0.450 (0.292)	16.07 (3.546)	air	186 (85.6)	67 (18.7)	78 (25.6)	
0.85 (0.63)	2422	2.492 (9.431)		0.54 (0.067)	air	182 (83.1)	69 (20.5)	79 (25.8)	
55.56 (39.81)	2519	4.581 (16.582)	0.567 (0.345)	12.19 (2.690)	air	184 (84.2)	70 (20.8)	79 (25.8)	
118.82 (88.60)	2208	7.072 (26.772)	0.411 (0.250)	16.80 (3.710)	air	188 (86.4)	68 (20.0)	80 (26.4)	
27.10 (20.21)	2554	5.417 (19.958)	0.871 (0.530)	7.95 (1.561)	air	181 (82.8)	70 (20.8)	80 (26.3)	
76.81 (56.77)	2282	5.370 (20.329)	0.471 (0.286)	14.68 (2.893)	air	185 (84.7)	69 (20.6)	79 (26.1)	
Av 69.74 (47.53)	2304	4.662 (18.600)	0.597 (0.321)	15.11 (3.587)	air	184 (84.6)	69 (20.5)	79 (26.1)	28.94 (97.73)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (L/h)	lb/hp·hr (g/kW·h)	Hp·hr per gal (kW·h/L)	Cool. med.	Temp °F (°C) Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 11th (4D) Gear											
105.05 (78.33)	5855 (25.95)	6.62 (10.66)	2197	2.50	6.985 (26.442)	0.468 (0.285)	14.76 (2.907)	187 (86.1)	67 (19.2)	74 (23.5)	28.96 (97.79)
75% of Pull at Maximum Power — Ten Hours 11th (4D) Gear											
81.57 (60.68)	4645 (19.77)	6.86 (11.05)	2275	2.27	5.994 (22.691)	0.509 (0.310)	13.57 (2.674)	189 (87.4)	62 (16.8)	65 (18.1)	28.75 (97.09)
50% of Pull at Maximum Power — Two Hours 11th (4D) Gear											
55.72 (41.55)	2965 (13.18)	7.05 (11.35)	2514	1.55	4.848 (18.352)	0.469* (0.286)	11.49 (2.264)	185 (85.0)	70 (20.8)	81 (26.9)	28.80 (97.59)
50% of Pull at Reduced Engine Speed — Two Hours 15th (5D) Gear											
55.70 (41.53)	2965 (13.18)	7.05 (11.34)	1584	1.51	5.828 (14.690)	0.475 (0.289)	14.55 (3.066)	177 (80.5)	56 (13.1)	59 (14.7)	28.88 (97.85)

MAXIMUM POWER IN SELECTED GEARS

82.14 (61.25)	14286 (63.55)	2.16 (3.47)	2248	15.92	3rd (1D) Gear	184 (84.6)	60 (15.6)	62 (16.7)	28.94 (97.75)
101.04 (75.35)	12598 (56.04)	5.01 (8.06)	2199	6.21	4th (2C) Gear	188 (86.8)	60 (15.6)	65 (17.2)	28.94 (97.73)
104.21 (77.71)	10576 (47.04)	5.70 (9.17)	2249	4.65	5th (2D) Gear	187 (86.1)	61 (16.1)	65 (17.2)	28.95 (97.76)
101.15 (75.43)	9475 (42.14)	6.00 (9.66)	2201	5.77	6th (3C) Gear	185 (85.0)	61 (16.2)	64 (17.8)	28.95 (97.76)
102.65 (76.55)	8604 (38.27)	6.47 (7.20)	2200	5.44	7th (3D) Gear	188 (86.7)	62 (16.7)	65 (18.3)	28.96 (97.79)
104.19 (77.70)	8060 (35.85)	6.85 (7.60)	2198	5.27	8th (3D) Gear	185 (84.5)	62 (16.7)	64 (17.6)	28.95 (97.76)
105.59 (77.10)	7079 (31.49)	8.48 (8.62)	2198	2.76	9th (4C) Gear	185 (84.5)	65 (18.3)	68 (20.0)	28.97 (97.83)
101.22 (75.48)	6488 (28.86)	8.85 (9.42)	2199	2.67	10th (5D) Gear	186 (85.6)	65 (17.2)	65 (18.3)	28.96 (97.79)
104.69 (78.07)	5926 (26.36)	9.62 (10.66)	2198	2.42	11th (4D) Gear	187 (86.1)	65 (18.3)	70 (21.1)	28.98 (97.86)
101.92 (76.00)	4958 (22.05)	7.71 (12.41)	2199	2.16	12th (5C) Gear	185 (85.0)	69 (17.2)	66 (18.9)	28.96 (97.79)
101.96 (76.03)	4792 (21.32)	7.98 (12.84)	2200	2.07	13th (4D) Gear	185 (84.7)	64 (17.8)	66 (18.9)	28.97 (97.83)
102.50 (76.28)	4118 (18.32)	9.32 (14.99)	2201	1.90	14th (5D) Gear	191 (88.1)	64 (17.8)	68 (20.0)	28.97 (97.83)

Department of Agricultural Engineering

Dates of Test: September 21 to October 4, 1988

Manufacturer: WHITE-NEW IDEA FARM EQUIPMENT COMPANY, Division of Allied Products, 123 West Sycamore Street, Coldwater, Ohio 45828

FUEL, OIL AND TIME: **Fuel** No. 2 Diesel **Cetane No.** 51.2 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** (15/15°C) 0.8209 **Fuel weight** 6.910 lbs/gal (0.828 kg/l) **Oil SAE** 15W-40 **API service classification** CC, CD/SD, SE, SF **To motor** 5.968 gal (15.022 l) **Drained from motor** 5.419 gal (12.942 l) **Transmission and final drive lubricant** White Farm Equipment Universal Fluid **Total time engine was operated** 54.0 hours.

ENGINE: **Make** Consolidated Diesel Corporation-Cummins Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 44228160 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.02" × 4.72" (102 mm × 120 mm) **Compression ratio** 18.5 to 1 **Displacement** 359 cu in (5880 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, separate radiators for transmission and powershift oils **Fuel filter** one paper cartridge and prestrainer **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

ENGINE OPERATING PARAMETERS: **Maximum fuel rate** 50.71 lb/hr (23.00 kg/hr) **High idle** 2525-2425 rpm **Turbo boost** nominal 15.75 psi (95 kPa) as measured 15.0 psi (90 kPa)

CHASSIS: **Type** standard with duals **Serial No.** *401214-1201* **Tread width** rear 64" (1625 mm) to 125" (3125 mm) front 61" (1550 mm) to 85" (2160 mm) **Wheel base** 111.5" (2830 mm) **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center line of rear wheels 25.8" (654 mm) Vertical distance above roadway 42.0" (1075 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (5) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.7 (2.7) second 2.0 (3.2) third 2.4 (3.9) fourth 3.2 (5.1) fifth 3.8 (6.1) sixth 4.1 (6.6) seventh 4.6 (7.3) eighth 4.9 (7.9) ninth 5.5 (8.9) tenth 5.9 (9.5) eleventh 6.7 (10.8) twelfth 7.7 (12.5) thirteenth 8.0 (12.9) fourteenth 9.5 (15.0) fifteenth 11.1 (17.9) sixteenth 13.6 (21.9) seventeenth 16.4 (26.4) eighteenth 19.6 (31.5) reverse 2.0 (3.2), 2.4 (3.9), 2.9 (4.7), 4.9 (7.9), 6.0 (9.6), 7.1 (11.5) **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning ra-**

LUGGING ABILITY IN 11th (4D) GEAR

Crankshaft Speed rpm	2100	1980	1750	1540	1311	1077
Pull—lbs (kN)	5990 (26.65)	6755 (30.05)	7918 (35.23)	8177 (36.37)	8276 (36.81)	7481 (33.28)
Increase in Pull %	0	13	29	36	40	28
Power—Hp (kW)	104.89 (78.07)	107.15 (79.91)	102.85 (76.70)	100.35 (74.83)	86.56 (64.60)	64.19 (47.87)
Speed—Mph (km/h)	6.02 (10.68)	5.95 (9.57)	5.27 (8.48)	4.80 (7.41)	3.91 (6.30)	2.93 (5.19)
Slip %	2.42	2.59	2.95	5.27	5.64	5.10

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	77.0
75% of Pull at Maximum Power—Ten Hours	77.0
50% of Pull at Maximum Power—Two Hours	76.0
50% of Pull at Reduced Engine Speed—Two Hours	74.5
Bystander in 18th (6D) gear	86.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 20.8R38, * 12 (85)	Four 20.8R38, * 12 (85)
Ballast	—Liquid (each)	None	None
	—Tire repair (each)	95 lb. (27 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 11.00-16, 8, 40 (275)	Two 11.00-16, 8, 40 (275)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	512 lb. (147 kg)	None
Height of Drawbar		29.5 in. (749 mm)	29.5 in. (749 mm)
Static Weight with Operator	—Rear	11510 lb. (5221 kg)	11295 lb. (5119 kg)
	—Front	5095 lb. (2320 kg)	3180 lb. (1442 kg)
	—Total	15515 lb. (6997 kg)	14065 lb. (6761 kg)

THREE POINT HITCH PERFORMANCE
(With external lift cylinder)

Observed Maximum Pressure psi (kPa)	2275	(15690)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	171	(77)
Location	pump inlet	

	Maximum Lift Capacity	
QUICK ATTACH	no	
CATEGORY	III	
LOAD lbs (kg)	*7395	(3327)
TIME sec	7.59	
HITCH POINT MOVEMENT in (mm)		
Lowest position	14.0	(356)
Top of timed range	40.0	(1016)
Highest position	40.1	(1019)
LOAD CG MOVEMENT in (mm)		
Lowest position	15.5	(338)
Top of timed range	44.0	(1119)
Highest position	44.5	(1125)

*Manufacturers claim was 8000 lb. (3629 kg)

dius *(on concrete surface with brake applied) right* **140"** *(3.72 m) left* **140"** *(3.72 m)on concrete surface without brake) right* **190"** *(4.84 m) left* **191"** *(4.86 m)* **Turning space diameter** *(on concrete surface with brake applied) right* **305"** *(7.75 m) left* **305"** *(7.75 m)on concrete surface without brake) right* **395"** *(9.98 m) left* **395"** *(10.03 m)* **Power take-off** *540 rpm at 2191 engine rpm and 1000 rpm at 2167 engine rpm* **Unladen tractor mass** *12865 lb (5835 kg)*

REPAIRS AND ADJUSTMENTS: *No repairs or adjustments*

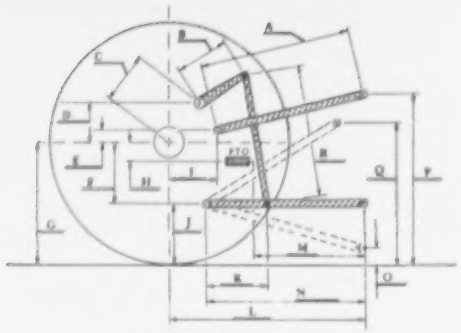
REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 152 °F (66.7°C). Twelve gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is an true and correct report of official Tractor Test No. **1615**, February 2, 1989

Note: report reissued Supplemental sales permit for White Workhorse 125 Diesel, November, 1991

LOUIS I. LEVITICUS
Engineer-in-Charge

N. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	in/lb	mm
A	25.5	648
B	16.0	406
C	20.1	511
D	18.6	472
E	10.4	263
F	10.2	260
G	33.2	844
H	1.9	48
I	19.9	506
J	23.0	584
K	22.5	566
L	45.5	1151
M	22.6	568
N	34.8	884
O	7.1	181
P	45.0	1143
Q	36.1	918
R	40.4	1026

WHITE WORKHORSE 125
THREE POINT HITCH PERFORMANCE
(From Nebraska Tractor Test 1633)
DEUTZ ALLIS 9150 DIESEL

Observed Maximum Pressure psi (kPa)	2275	(15690)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	147	(64)
Location	hydraulic suction line	

	Maximum Lift Capacity		with boost cylinder	
QUICK ATTACH	No		No	
CATEGORY	III		III	
LOAD lbs (kg)	4212	(1327)	8044	(1875)
TIME sec	6.36		4.92	
HITCH POINT MOVEMENT in (mm)				
Lowest position	13.9	(351)	13.6	(345)
Top of timed range	40.0	(1016)	40.0	(1016)
Highest position	40.2	(1021)	40.1	(1019)
LOAD CG MOVEMENT in (mm)				
Lowest position	14.4	(366)	14.2	(361)
Top of timed range	42.1	(1069)	42.1	(1069)
Highest position	42.3	(1074)	42.2	(1072)

White 120 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Durrell Nelson, Dean and Director

NEBRASKA TRACTOR TEST 1616—WHITE 140 DIESEL
ALSO WHITE WORKHORSE 145 DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (L/h)	lb/hp hr (kg/kW h)	Hp hr per gal (kW h/L)	Cooling medium	Temperature °F (°C) Air out bulb	Air in bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1016 rpm)								
158.55 (107.30)	2200	8.005 (30.302)	0.599 (0.243)	17.51 (1.609)	air	84 (17.6)	75 (23.9)	28.91 (97.82)
Standard Power Take-off Speed (1000 rpm) — One Hour								
145.56 (108.62)	2166	8.022 (30.361)	0.595 (0.240)	17.69 (1.644)	air	87 (18.3)	75 (23.7)	28.91 (97.82)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
121.11 (90.31)	2261	7.211 (27.298)	0.611 (0.250)	16.79 (1.350)	air	186 (85.6)	67 (19.4)	76 (24.2)
1.59 (1.19)	2555	2.219 (8.398)		0.72 (0.62)	air	184 (84.4)	67 (19.4)	75 (23.9)
51.22 (43.85)	2291	6.565 (17.273)	0.515 (0.313)	19.42 (2.645)	air	186 (85.6)	67 (19.4)	75 (23.9)
140.56 (104.66)	2251	9.062 (30.574)	0.597 (0.241)	17.61 (1.429)	air	187 (85.8)	68 (20.0)	76 (24.4)
50.69 (37.97)	2508	5.578 (12.786)	0.736 (0.450)	9.14 (1.801)	air	184 (84.2)	68 (20.0)	76 (24.4)
91.65 (68.35)	2284	5.839 (22.104)	0.640 (0.268)	15.69 (1.091)	air	178 (81.1)	71 (21.7)	76 (24.4)
Av 74.47 (55.53)	2280	5.212 (19.730)	0.684 (0.284)	14.29 (2.813)	air	184 (84.3)	68 (20.0)	75 (24.3)	28.87 (97.69)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (L/h)	lb/hp hr (kg/kW h)	Hp hr per gal (kW h/L)	Temp °F (°C) Cool mfg cool	Air out bulb	Air in bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 12th (4D) Gear											
122.85 (91.61)	7458 (33.17)	6.18 (9.94)	2199	2.70	7.981 (30.212)	0.649 (0.273)	15.39 (1.072)	182 (83.1)	64 (17.8)	70 (20.8)	28.06 (95.78)
75% of Full at Maximum Power — Ten Hours 13th (4D) Gear											
97.71 (72.86)	5695 (25.56)	6.45 (10.35)	2276	2.05	6.705 (25.378)	0.674 (0.298)	16.59 (1.671)	182 (83.5)	54 (12.1)	66 (19.0)	28.06 (95.80)
50% of Full at Maximum Power — Two Hours 15th (4D) Gear											
66.09 (49.28)	5797 (26.09)	6.55 (10.50)	2297	1.45	5.270 (19.951)	0.548 (0.333)	12.62 (2.495)	176 (79.7)	60 (15.6)	64 (17.8)	28.71 (98.83)
50% of Full at Reduced Engine Speed — Two Hours 15th (5D) Gear											
66.09 (49.28)	5797 (26.09)	6.55 (10.54)	1619	1.45	4.465 (16.904)	0.467 (0.284)	14.80 (2.918)	174 (78.9)	62 (16.8)	67 (19.2)	28.06 (96.78)
MAXIMUM POWER IN SELECTED GEARS											
107.45 (80.13)	15060 (66.99)	2.68 (4.31)	2242	11.05	5th (2D) Gear			185 (85.0)	70 (21.1)	76 (24.4)	28.60 (96.78)
118.95 (88.68)	13576 (60.39)	3.29 (5.29)	2195	8.56	6th (2D) Gear			186 (85.6)	69 (20.6)	75 (23.9)	28.60 (96.78)
121.48 (90.59)	11915 (53.00)	3.82 (6.15)	2196	6.81	7th (3D) Gear			184 (84.2)	69 (20.6)	75 (23.9)	28.61 (96.81)
124.91 (93.07)	9992 (44.45)	4.68 (7.54)	2199	5.06	8th (3D) Gear			186 (85.6)	68 (20.0)	75 (23.9)	28.61 (96.81)
125.58 (93.23)	9155 (40.63)	5.06 (8.15)	2200	5.16	9th (4D) Gear			183 (83.9)	68 (20.0)	74 (23.1)	28.62 (96.85)
119.90 (89.41)	7869 (35.01)	5.64 (9.08)	2200	3.91	10th (5D) Gear			185 (85.0)	67 (19.4)	74 (23.1)	28.62 (96.85)
122.45 (91.31)	7567 (33.66)	6.07 (9.77)	2202	2.74	11th (5D) Gear			185 (85.0)	66 (18.9)	75 (23.9)	28.63 (96.88)
125.01 (93.22)	7594 (33.78)	6.17 (9.94)	2195	2.66	12th (4D) Gear			190 (87.8)	67 (19.4)	74 (23.1)	28.62 (96.85)
125.56 (93.63)	6506 (28.94)	7.57 (12.18)	2200	2.52	13th (5D) Gear			182 (83.1)	66 (18.9)	75 (23.9)	28.63 (96.88)
119.90 (89.41)	6055 (26.93)	7.61 (12.25)	2200	1.89	14th (5D) Gear			188 (86.6)	66 (18.9)	72 (22.2)	28.64 (96.71)
119.08 (88.80)	5058 (22.50)	8.83 (14.21)	2200	1.89	15th (5D) Gear			187 (86.1)	66 (18.9)	75 (23.9)	28.65 (96.98)

Department of Agricultural Engineering

Dates of Test: September 20 to October 5, 1988

Manufacturer: WHITE NEW IDEA FARM EQUIPMENT COMPANY, Division of Allied Products, 105 West Sycamore Street, Coldwater, Ohio 45828

FUEL, OIL AND TIME: **Fuel** No. 2 Diesel **Cetane No.** 51.2 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8299 **Fuel weight** 6.910 lbs/gal *(0.828 kg/l)* **Oil SAE** 15W-40 **API service classification** CC, CD/SD, SE, SF **To motor** 5.741 gal *(14.162 l)* **Drained from motor** 5.231 gal *(12.231 l)* **Transmission and final drive lubricant** White Farm Equipment Universal Fluid **Total time engine was operated** 55.5 hours

ENGINE: **Make** Consolidated Diesel Corporation-Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 44220402 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.02" × 4.72" *(102 mm × 120 mm)* **Compression ratio** 16.5 to 1 **Displacement** 359 cu in *(5880 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, separate radiators for transmission and powershift oils **Fuel filter** one paper cartridge and prestrainer **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: **Maximum fuel rate** 59.04 lb/hr *(26.78 kg/hr)* **High idle** 2525-2625 rpm **Turbo boost** nominal 15.2-16.2 psi *(91-112 kPa)* as measured 15.0 psi *(103 kPa)*

CHASSIS: **Type** standard with duals **Serial No.** **401159-1401** **Tread width** rear 64" *(1625 mm)* to 128" *(3125 mm)* front 60" *(1524 mm)* to 84" *(2135 mm)* **Wheel base** 111.5" *(2830 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center line of rear wheels 25.1" *(639 mm)* Vertical distance above roadway 43.2" *(1096 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (5) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.8 (3.0) second 2.2 (3.5) third 2.8 (4.5) fourth 2.7 (4.3) fifth 2.9 (4.7) sixth 3.5 (5.6) seventh 4.0 (6.4) eighth 4.8 (7.7) ninth 5.2 (8.4) tenth 5.7 (9.2) eleventh 6.2 (9.9) twelfth 6.8 (10.9) thirteenth 7.5 (12.0) fourteenth 7.5 (12.1) fifteenth 8.9 (14.3) sixteenth 13.2 (21.3) seventeenth 16.0 (25.8) eighteenth 19.1 (30.8) reverse 2.2 (3.5) 2.6 (4.2) 5.1 (8.0) 4.6 (7.4) 5.6 (9.0) 6.7 (10.8) **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydraulically

LUGGING ABILITY IN 12th (4D) GEAR

Crankshaft Speed rpm	2199	1988	1749	1528	1309	1105
Pull—lbs (kN)	7504 (33.38)	8518 (37.88)	9169 (40.78)	9638 (42.87)	9871 (43.91)	9486 (42.20)
Increase in Pull %	0	10	21	27	27	26
Power—Hp (kW)	123.01 (91.73)	124.05 (92.51)	119.42 (89.05)	109.54 (81.71)	84.55 (63.03)	42.02 (31.33)
Speed—Mph (km/h)	6.17 (9.94)	5.57 (8.96)	4.88 (7.86)	4.06 (6.54)	3.63 (5.84)	3.15 (5.07)
Slip %	3.66	2.99	5.16	5.55	1.97	1.97

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	75.5
75% of Full at Maximum Power—Ten Hours	75.5
50% of Full at Maximum Power—Two Hours	74.5
50% of Full at Reduced Engine Speed—Two Hours	74.5
Bystander in 12th (4D) gear	88.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—Air: size, ply & psi (kPa)	Four 20.8R38, * 18 (85)	Four 20.8R38, * 18 (85)
Ballast	—Liquid (each)	None	None
	—Tire inserts (each)	81 lb. (37 kg)	None
Front Tires	—Air: size, ply & psi (kPa)	Two 11.00-16, 8, 40 (275)	Two 11.00-16, 8, 40 (275)
Ballast	—Liquid (each)	None	None
	—Cast iron (each)	450 lb. (199 kg)	None
Height of Drawbar		24 in. (610 mm)	24 in. (610 mm)
Static Weight with Operator	—Rear	11965 lb. (5246 kg)	11600 lb. (5189 kg)
	—Front	6100 lb. (2766 kg)	5221 lb. (2483 kg)
	—Total	18065 lb. (7189 kg)	16805 lb. (6652 kg)

THREE POINT HITCH PERFORMANCE
(With external lift cylinder)

Observed Maximum Pressure psi (kPa)	2275	(15690)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	158	(70)
Location	pump inlet	

	Maximum Lift Capacity	
QUICK ATTACH	no	
CAT I/CAT II	III	
LOAD lbs (kg)	*7310	(3316)
TIMF sec	6.95	
HITCH POINT MOVEMENT in (mm)		
Lowest position	12.0	(310)
Top of travel range	38.0	(965)
Highest position	**16.4	(417)
LOAD CG MOVEMENT in (mm)		
Lowest position	11.4	(290)
Top of travel range	40.7	(1034)
Highest position	41.6	(1057)

*Manufacturers claim was 8000 lb (3629 kg).
**The observed highest position 16.4" (417 mm) was more than two times the minimum top height 40.0" (1016 mm) specified by SAE standard J217.19

power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 15.1' *(3.83 m)* left 15.5' *(3.88 m)* (on concrete surface without brake) right 22.6' *(5.73 m)* left 24.8' *(6.29 m)* **Turning space diameter** (on concrete surface with brake applied) right 31.0' *(7.87 m)* left 32.0' *(8.12 m)* (on concrete surface without brake) right 46.4' *(12.28 m)* left 52.2' *(13.27 m)* **Power take-off** 540 rpm at 2191 engine rpm and 1000 rpm at 2187 engine rpm **Unladen tractor mass** 15065 lb *(5926 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

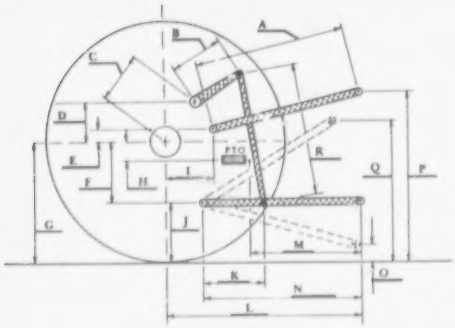
REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 144 °F *(62 °C)*. Eleven gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. Manufacturer specifications for engine bore, stroke, displacement and compression ratio were not verified.

We, the undersigned, certify that this is an true and correct report of official Tractor Test No. **1616**, February 2, 1989

Note: Report reissued, supplemental sales permit for White Workhorse 145 Diesel November, 1991

LOUIS I. LEVITICUS
Engineer-in-charge

K. VON RABUEN
R. H. LEHNEN
T. J. BASHFORD
Board of Tractor Test Engineers



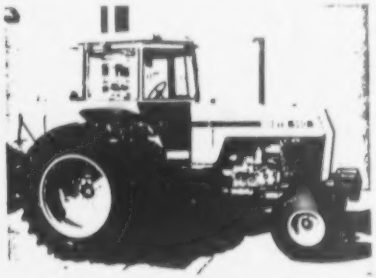
Hitch Dimensions as Tested — No Load

	inch	mm
A	25.5	641
B	16.0	406
C	20.1	511
D	18.5	472
E	10.4	263
F	10.2	260
G	33.2	844
H	1.9	48
I	19.9	506
J	23.0	584
K	22.5	566
L	45.5	1151
M	22.4	568
N	34.8	884
O	7.4	187
P	41.0	1143
Q	37.1	963
R	39.8	1010

WHITE WORKHORSE 145 DIESEL THREE POINT HITCH PERFORMANCE (From Nebraska Tractor Test 1633) DEUTZ ALLIS 9150 DIESEL

Observed Maximum Pressure psi (kPa)	2275	(15690)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	147	(64)
Location	hydraulic suction line	

	Maximum Lift Capacity with boost cylinder	
QUICK ATTACH	No.	No.
CATEGORY	III	III
LOAD lbs (kg)	7212 (3271)	8546 (3875)
TIME sec	6.56	4.92
HITCH POINT MOVEMENT in (mm)		
Lowest position	15.8 (351)	15.6 (345)
Top of timed range	40.0 (1016)	40.0 (1016)
Highest position	40.2 (1021)	40.1 (1019)
LOAD CG MOVEMENT in (mm)		
Lowest position	14.4 (366)	14.2 (361)
Top of timed range	42.1 (1069)	42.1 (1069)
Highest position	42.8 (1074)	42.2 (1072)



White 140 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA TRACTOR TEST 1640—BELARUS 822 DIESEL ALSO BELARUS 820 DIESEL ALSO BELARUS 800M AND 802M DIESEL 18 SPEED

Department of Biological Systems Engineering

Dates of Test: June 6-19, 1990

Sound level test on 800M—October 25, 1991

Manufacturer: MINSK TRACTOR WORKS, MTZ, Minsk, USSR

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 55.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8396 **Fuel weight** 6.991 lbs/gal *(0.838 kg/l)* **Oil SAE** 30 **API service classification** SE, SF, CC, CD **To motor** 2.575 gal *(9.748 l)* **Drained from motor** 2.552 gal *(8.826 l)* **Transmission and final drive lubricant** SAE 90 gear lubricant **Hydraulic lubricant** SAE 30 **Total time engine was operated** 59.0 hours.

ENGINE: Make MTZ Diesel **Model** D240 **Type** four cylinder vertical **Serial No.** 214556 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.331" × 4.921" *(110 mm × 125 mm)* **Compression ratio** 16 to 1 **Displacement** 290 cu in *(4750 ml)* **Starting system** 24 volt **Lubrication** pressure **Air cleaner** oil bath with pre-cleaner **Oil filter** full flow centrifugal **Oil cooler** radiator for crankcase oil **Fuel filter** one cleanable screen and one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

ENGINE OPERATING PARAMETERS: Fuel rate: not to exceed 92.4 lb/h *(14.7 kg/h)* **High idle:** not to exceed 2380 rpm.

CHASSIS: Type front wheel assist **Serial No.** 2495455 **Tread width** rear 56.7" *(1440 mm)* to 82.7" *(2100 mm)* front 55.1" *(1350 mm)* to 70.9" *(1800 mm)* **Wheel base** 96.5" *(2450 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 36.9" *(937 mm)* Vertical distance above roadway 40.4" *(1025 mm)* Horizontal distance from center of rear wheel tread 0.4" *(11 mm)* to the right **Hydraulic control system** direct engine drive with throwout lever (engaged during test) **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 1.2 *(1.9)* second 1.6 *(2.6)* third 2.1 *(3.3)* fourth 2.7 *(4.4)* fifth 3.5 *(5.6)* sixth 4.3 *(6.9)* seventh 4.8 *(7.4)* eighth 5.1 *(8.2)* ninth 5.7 *(9.1)* tenth 6.0 *(9.6)* eleventh 6.7 *(10.8)* twelfth 7.5 *(11.8)* thirteenth 7.9 *(12.7)* fourteenth 8.7 *(13.9)* fifteenth 9.7 *(15.6)* sixteenth 11.5 *(18.4)* seventeenth 16.1 *(25.9)* eighteenth 21.5 *(34.5)* reverse 2.5 *(4.1)*, 5.4 *(5.4)*, 4.5(7.0), 5.7 *(9.2)* **Clutch** single dry disc operated by foot pedal **Brakes** dry disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption g/dHp-hr (g/kW-h)	lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Cooling medium	Temperature °F (°C) Air over bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 571 rpm)								
75.15 (56.04)	2200	0.477 (0.968)	0.417 (0.255)	16.78 (3.31)	195 (91)	59 (15)	75 (24)	28.65 (97.30)
Standard Power Take-Off Speed (1001 rpm) — One Hour								
75.55 (54.85)	2185	0.455 (0.780)	0.421 (0.256)	16.59 (3.27)	194 (90)	65 (17)	74 (23)	28.78 (97.66)
Standard Power Take-Off Speed (540 rpm) — One Hour								
71.71 (53.47)	2075	0.421 (0.870)	0.412 (0.250)	16.99 (3.35)	196 (91)	59 (15)	75 (24)	28.80 (97.73)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
66.75 (48.27)	2220	0.475 (0.966)	0.418 (0.255)	16.71 (3.29)	184 (84)	59 (15)	75 (24)	
	2351	1.550 (3.036)	—	—	144 (62)	59 (15)	75 (24)	
55.40 (24.91)	2302	2.503 (4.707)	0.481 (0.293)	14.52 (2.86)	155 (68)	60 (16)	75 (24)	
74.22 (55.18)	2205	0.467 (0.685)	0.415 (0.253)	16.84 (3.32)	187 (86)	61 (16)	76 (24)	
16.85 (12.57)	2320	1.824 (0.804)	0.757 (0.460)	9.24 (1.82)	154 (68)	61 (16)	76 (24)	
49.55 (36.60)	2268	3.025 (11.452)	0.429 (0.261)	16.31 (3.21)	187 (75)	65 (17)	76 (24)	
Av 59.86 (29.73)	2275	1.794 (10.573)	0.490 (0.298)	14.27 (2.81)	165 (74)	60 (16)	75 (24)	28.61 (97.34)

DRAWBAR PERFORMANCE (Front Drive in Automatic mode)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption g/dHp-hr (g/kW-h)	lb/hp-hr (g/kW-h)	Hp-hr per gal (kW-h/l)	Temp. °F (°C) Cool. eng. med.	Air over bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 9th (4H) Gear											
62.47 (46.58)	4225 (18.81)	5.54 (8.92)	2200	5.67	0.298 (0.271)	0.481 (0.293)	14.55 (2.86)	190 (88)	68 (20)	79 (26)	28.87 (97.75)
75% of Pull at Maximum Power — Two Hours 9th (4H) Gear											
49.55 (36.95)	3265 (14.51)	5.69 (9.16)	2244	2.73	0.545 (0.612)	0.500 (0.306)	13.98 (2.75)	185 (85)	74 (23)	86 (30)	28.79 (97.50)
50% of Pull at Maximum Power — Two Hours 9th (4H) Gear											
34.10 (25.43)	2175 (9.67)	5.88 (9.46)	2301	2.05	0.775 (10.505)	0.569 (0.166)	12.29 (2.42)	171 (77)	75 (23)	85 (29)	28.65 (96.95)
50% of Pull at Reduced Engine Speed — Two Hours 16th (8L) Gear											
34.10 (25.42)	2175 (9.67)	5.88 (9.46)	1509	2.07	0.510 (0.745)	0.474 (0.280)	14.76 (2.91)	169 (76)	74 (23)	80 (29)	28.62 (96.90)

MAXIMUM POWER IN SELECTED GEARS

47.90 (35.72)	9975 (4436)	1.80 (2.90)	2541	14.58	9rd (2L) Gear	189 (86)	72 (22)	80 (27)	28.66 (97.05)
59.20 (44.15)	8906 (3961)	2.49 (4.01)	2200	8.56	6th (2H) Gear	185 (85)	72 (22)	82 (28)	28.64 (96.99)
62.58 (46.91)	7021 (3123)	3.35 (5.36)	2200	5.69	5th (5L) Gear	185 (85)	67 (19)	78 (25)	28.86 (97.66)
65.97 (47.26)	5741 (2553)	4.14 (6.66)	2198	4.58	6th (4L) Gear	185 (85)	67 (19)	78 (25)	28.86 (97.66)
69.33 (47.23)	5305 (2360)	4.48 (7.20)	2199	4.15	7th (5H) Gear	184 (84)	67 (19)	72 (22)	28.85 (97.63)
65.56 (47.19)	4825 (2145)	4.94 (7.95)	2199	3.72	8th (5L) Gear	187 (86)	66 (19)	74 (23)	28.85 (97.70)
64.27 (47.93)	4550 (2025)	5.54 (8.92)	2201	3.36	9th (6H) Gear	188 (86)	66 (19)	76 (24)	28.87 (97.77)
65.41 (47.28)	4095 (1821)	5.81 (9.35)	2197	3.29	10th (6L) Gear	187 (86)	66 (19)	75 (24)	28.86 (97.73)
65.95 (47.63)	3640 (1619)	6.59 (10.60)	2199	3.03	11th (5H) Gear	186 (86)	66 (19)	74 (23)	28.85 (97.70)
65.10 (47.06)	3291 (1464)	7.19 (11.57)	2201	2.77	12th (7L) Gear	185 (86)	67 (19)	72 (22)	28.85 (97.63)
63.52 (47.16)	3079 (13.69)	7.74 (12.46)	2199	2.55	13th (6H) Gear	186 (85)	66 (19)	75 (24)	28.86 (97.73)
62.19 (46.58)	2751 (12.15)	8.54 (13.74)	2200	2.35	14th (8L) Gear	181 (83)	67 (19)	71 (22)	28.82 (97.60)

LUGGING ABILITY IN 9th (4H) GEAR

Crankshaft Speed rpm		2201	1980	1759	1539	1318	1101
Pull—lbs (kN)		4350 (19.35)	4580 (20.37)	4997 (22.23)	5344 (23.77)	5353 (23.81)	5095 (22.66)
Increase in Pull %		0	5	15	23	23	17
Power—Hp (kW)		64.27 (47.93)	60.74 (45.30)	58.49 (43.62)	54.58 (40.70)	46.98 (35.03)	37.44 (27.92)
Speed—Mph (km/h)		5.54 (8.92)	4.97 (8.00)	4.59 (7.38)	3.85 (6.19)	3.29 (5.30)	2.76 (4.45)
Slip %		5.36	5.58	5.87	6.15	4.30	6.15

TRACTOR SOUND LEVEL	W/O Cab dB(A)	With Cab dB(A)
Maximum Available Power—Two Hours	91.0	81.5
75% of Pull at Maximum Power—Ten Hours	93.0	80.5
50% of Pull at Maximum Power—Two Hours	92.0	81.0
50% of Power at Reduced Engine Speed—Two Hours	91.0	80.5
Bystander in 17th (9L) gear	86.0	89.0

MAXIMUM POWER IN SELECTED GEARS
MAXIMUM POWER (4WD MODE)

64.16 (47.85)	4546 (19.13)	5.54 (8.91)	2199	2.86	9th (4H) Gear	188 (86)	66 (19)	76 (24)	28.87 (97.77)

MAXIMUM PULL (2WD MODE)

51.16 (38.13)	8053 (35.82)	2.38 (3.83)	2254	14.49	4th (2H) Gear	180 (82)	72 (22)	81 (27)	28.65 (97.02)

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 480/65R28 (18.4R28)	Two 480/65R28 (18.4R28)
Ballast	—Liquid (each)	720 lb. (327 kg)	None
	—Cast Iron (each)	110 lb. (48 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 280/85R24 (11.2R24)	Two 280/85R24 (11.2R24)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	55 lb. (25 kg)	None
Height of Tractor		155 in. (395 mm)	155 in. (395 mm)
Static Weight with Operator	Rear	7620 lb. (3456 kg)	5080 lb. (2067 kg)
	Front	3455 lb. (1567 kg)	3650 lb. (1656 kg)
	Total	11075 lb. (5023 kg)	8830 lb. (4223 kg)*

156" (3.96 m) left 191" (4.85 m)on concrete surface without brake) right 175" (4.45 m) left 215" (5.46 m) **Turning space diameter** (on concrete surface with brake applied) right 525" (13.20 m) left 595" (9.98 m)on concrete surface without brake) right 361" (9.17 m) left 441" (11.20 m) **Power take-off** 540 rpm at 2075 engine rpm and 1000 rpm at 2182 engine rpm **Unladen tractor mass** 8480 lb (3846 kg)

REPAIRS AND ADJUSTMENTS: One fuel injector was replaced during preliminary PTO test

***NOTE:** Tractor is shipped with rear weights — 168 lb (76 kg) and front weight package — 492 lb (223 kg)

Note: Report reissued, supplemental sales permit for Belarus 800M and 802M Diesel models. December, 1991

REMARKS: All test results were determined from observed data obtained in accordance with official SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump was maintained at 104 °F (73°C). Twelve gears were chosen between 15% slip and 10 mph (16.1 km/h).

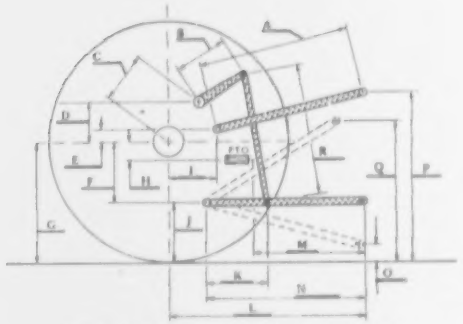
We, the undersigned, certify that this is an true and correct report of official Tractor Test No. **1640**, July, 30, 1990

LOUIS F. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
F. F. BASHFORD
Board of Tractor Test Engineers

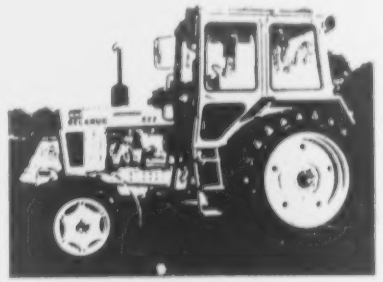
THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2800	(19300)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	151	(66)
Location	hydraulic reservoir	
	Maximum Lift Capacity	
QUICK ADJUST	Std.	*
CATEGORY	II	
CLASS lbs (kg)	5324	(2398)
TIME sec	2.14	
HITCH POINT MOVEMENT in (mm)		
Lowest position	12.0	(305)
Top of timed range	36.0	(914)
Highest position	36.5	(927)
LOAD CG MOVEMENT in (mm)		
Lowest position	12.2	(309)
Top of timed range	43.5	(1099)
Highest position	44.8	(1137)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	21.0	533
B	10.2	260
C	17.6	447
D	10.6	270
E	6.3	160
F	9.6	245
G	28.4	721
H	4.6	117
I	19.0	483
J	18.8	478
K	15.1	384
L	40.0	1016
M	22.6	574
N	31.1	791
O	8.0	203
P	37.8	961
Q	36.4	924
R	18.4	467



Belarus 822 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell W. Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1620—SUMMARY 058
JOHN DEERE 4555 POWERSHIFT DIESEL
ALSO JOHN DEERE 4560 POWERSHIFT DIESEL
15 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (L/h)	lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/L)	Main Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—998 rpm)					
136.89 (116.99)	2200	8.94 (33.83)	0.394 (0.240)	17.55 (4.64)	
Maximum Power (2 Hours)					
162.47 (121.15)	1900	8.72 (32.99)	0.471 (0.286)	18.64 (4.93)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
156.89 (116.99)	2200	8.94 (33.83)	0.394 (0.240)	17.55 (4.64)	77°F (25°C)
135.63 (101.14)	2242	7.99 (30.23)	0.407 (0.248)	16.99 (4.49)	Relative humidity
103.69 (77.32)	2276	6.00 (22.97)	0.440 (0.268)	15.72 (4.16)	55%
70.56 (52.61)	2325	5.25 (19.88)	0.514 (0.313)	13.45 (3.55)	Barometer
35.55 (26.51)	2358	3.82 (14.46)	0.745 (0.452)	9.51 (2.51)	29.10 "Hg (98.54 kPa)
0.77 (0.58)	2389	2.43 (9.20)	21.76 (13.26)	0.52 (0.14)	

Maximum Torque 496 lb·ft (672 N·m) at 1600 rpm
Maximum Torque Rise 32.6%
Torque Rise at 1000 engine rpm 25%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/L)	Temp °F (°C) cool mtg vent	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—12th Gear									
151.40 (97.99)	5811 (25.85)	8.48 (13.65)	2159	2.26	0.470 (0.286)	14.70 (3.46)	184 (84)	72 (22)	28.82 (97.60)
75% of Pull at Maximum Power—12th Gear									
101.78 (74.90)	4357 (19.38)	8.76 (14.10)	2257	1.64	0.504 (0.307)	13.70 (3.22)	183 (84)	76 (24)	28.81 (97.56)
50% of Pull at Maximum Power—12th Gear									
69.64 (51.83)	2906 (12.93)	8.96 (14.42)	2301	1.02	0.480 (0.292)	13.58 (3.21)	180 (82)	76 (24)	28.81 (97.56)
75% of Pull at Reduced Engine Speed—13th Gear									
101.57 (75.74)	4354 (19.37)	8.75 (14.08)	1822	1.61	0.508 (0.309)	13.70 (3.22)	185 (85)	76 (24)	28.81 (97.56)
50% of Pull at Reduced Engine Speed—13th Gear									
69.85 (52.08)	2916 (12.97)	8.99 (14.46)	1854	1.02	0.500 (0.322)	13.05 (3.07)	181 (83)	76 (24)	28.81 (97.56)

Location of Test: Center for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: April-May, 1989

Manufacturer: John Deere Waterloo Works, P.O. Box 5500, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 51.1 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8501 **Fuel weight** 6.912 lbs/gal (0.828 kg/l) **Oil SAE** 15W40 **API service classification** CD/SD **To motor** 5.455 gal (20.564 l) **Drained from motor** 5.235 gal (19.809 l) **Transmission and hydraulic lubricant** John Deere HyGard fluid **Front axle lubricant** John Deere GL-5 Gear Lubricant 85W-140 **Total time engine was operated** 29.5 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *RG60761J029016* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.56" × 4.75" (115.8 mm × 120.7 mm) **Compression ratio** 16.0 to 1 **Displacement** 466 cu in (7614 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge and prefilter **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate 59.9 65.4 lb/hr (27.2 29.7 kg/hr) **High idle** 2350-2400 rpm **Turbo boost** nominal 15.18 psi (103 124 kPa) as measured 16.5 psi (114 kPa)

CHASSIS: Type front wheel assist **Serial No.** *RW4555P001019* **Tread width** rear 92.0" (1574 mm) to 115.7" (2938 mm) front 65.1" (1603 mm) to 85.3" (2166 mm) **Wheel base** 117.1" (2974 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.38 (2.22) second 1.97 (3.18) third 2.38 (3.84) fourth 5.00 (8.05) fifth 5.45 (8.77) sixth 5.92 (9.53) seventh 4.51 (7.26) eighth 5.18 (8.34) ninth 5.92 (9.61) tenth 6.78 (10.91) eleventh 7.81 (12.57) twelfth 8.74 (14.06) thirteenth 10.81 (17.40) fourteenth 15.12 (24.34) fifteenth 18.71 (30.11) reverse 1.91 (3.07) 2.75 (4.40) 4.15 (6.67) 6.25 (10.06) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 998 rpm at 2200 engine rpm **Unladen tractor mass** 17755 lb (8053 kg)

DRAWBAR PERFORMANCE AT 1900 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/L)	Temp °F (°C) cool mtg vent	Air dry bulb	Barom inch Hg (kPa)
5th Gear									
120.94 (89.74)	15505 (68.97)	2.89 (4.66)	2160	15.92	0.518 (0.315)	13.48 (2.65)	185 (85)	58 (14)	28.65 (96.97)
6th Gear									
128.09 (95.52)	14051 (62.50)	3.42 (5.50)	2140	9.59	0.482 (0.293)	14.34 (2.83)	185 (85)	60 (16)	28.65 (96.97)
7th Gear									
132.62 (98.89)	12792 (56.90)	3.89 (6.26)	2049	5.36	0.464 (0.282)	14.88 (2.93)	185 (85)	57 (14)	28.65 (97.63)
8th Gear									
130.58 (97.36)	11786 (52.43)	4.17 (6.71)	1908	6.11	0.462 (0.281)	14.96 (2.95)	184 (84)	61 (16)	28.64 (96.99)
9th Gear									
134.05 (99.95)	10273 (45.69)	4.93 (7.93)	1901	4.72	0.453 (0.276)	15.32 (3.02)	185 (85)	59 (15)	28.63 (97.63)
10th Gear									
134.04 (99.94)	9008 (40.07)	5.56 (8.94)	1902	4.03	0.454 (0.276)	15.34 (3.02)	186 (86)	60 (16)	28.64 (96.99)
11th Gear									
133.06 (99.22)	7687 (34.19)	6.49 (10.45)	1902	3.12	0.455 (0.276)	15.25 (3.00)	186 (86)	62 (17)	28.62 (97.60)
12th Gear									
136.45 (101.74)	7124 (31.69)	7.29 (11.73)	1902	2.80	0.454 (0.276)	15.34 (3.02)	186 (86)	70 (21)	28.62 (97.60)
13th Gear									
135.47 (101.02)	5592 (24.87)	9.01 (14.50)	1903	2.29	0.440 (0.271)	15.49 (3.05)	186 (86)	71 (22)	28.62 (97.60)

DRAWBAR PERFORMANCE AT 1900 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/L)	Temp °F (°C) cool mtg vent	Air dry bulb	Barom inch Hg (kPa)
3rd Gear									
115.78 (86.33)	20975 (92.95)	2.04 (3.28)	2253	14.85	0.525 (0.319)	13.18 (2.60)	184 (84)	50 (10)	29.01 (98.24)
4th Gear									
151.11 (99.92)	16729 (74.42)	2.63 (4.24)	2120	8.58	0.472 (0.287)	13.91 (2.75)	184 (84)	50 (10)	29.02 (98.44)
5th Gear									
152.87 (99.71)	13938 (62.01)	3.26 (5.25)	1920	5.95	0.461 (0.280)	14.38 (2.84)	184 (84)	53 (12)	29.00 (98.37)
6th Gear									
137.51 (102.54)	10303 (45.84)	3.74 (6.06)	1898	6.19	0.445 (0.270)	15.10 (2.98)	185 (85)	54 (12)	29.00 (98.44)
7th Gear									
140.10 (104.48)	10269 (45.67)	3.88 (6.24)	1901	4.87	0.436 (0.265)	15.46 (3.05)	185 (85)	55 (12)	29.00 (98.44)
8th Gear									
134.95 (100.67)	11940 (53.11)	4.27 (6.87)	1905	5.81	0.455 (0.276)	15.25 (3.00)	185 (85)	56 (13)	29.00 (98.37)
9th Gear									
134.19 (100.10)	10152 (45.16)	4.93 (7.93)	1905	3.22	0.454 (0.276)	15.21 (3.00)	186 (86)	59 (15)	28.99 (98.37)
10th Gear									
135.58 (101.13)	9019 (40.12)	5.54 (8.92)	1901	2.88	0.439 (0.272)	15.35 (3.04)	185 (85)	54 (12)	29.00 (98.44)
11th Gear									
134.55 (100.36)	7797 (34.68)	6.52 (10.50)	1902	2.44	0.449 (0.273)	15.43 (3.04)	185 (85)	57 (14)	28.99 (98.37)
12th Gear									
135.28 (100.90)	7145 (31.78)	7.31 (11.77)	1902	2.30	0.450 (0.269)	15.48 (3.05)	185 (85)	58 (14)	28.98 (98.34)
13th Gear									
135.29 (100.91)	5547 (24.67)	9.07 (14.60)	1902	2.01	0.447 (0.272)	15.49 (3.05)	185 (85)	58 (14)	28.98 (98.34)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 125° F (52° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. This tractor did not meet manufacturers 5 point lift capacity claim of 8870 lb (4023 kg) or 9710 lb (4404 kg) with lift assist cylinder. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued: Supplemental sales permit for John Deere 4560 Powershift Diesel, November, 1991.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1020**, Summary 058, December 22, 1989.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. CRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (g/kW h)	Hp hr per gal (kW h/l)	Temp °F (°C) cool. sys.	Air filter inch (mm)	Barom. inch (kPa)
				3rd Gear					
114.57 (85.44)	20929 (93.07)	2.05 (3.30)	2255	14.88	0.522 (0.318)	19.25 (2.41)	185 (85)	50 (10)	28.99 (98.07)
				4th Gear					
150.73 (97.49)	17550 (78.05)	2.76 (4.44)	2200	6.99	0.474 (0.289)	14.79 (1.85)	185 (85)	50 (10)	29.05 (98.27)
				5th Gear					
152.55 (98.56)	15515 (68.42)	3.24 (5.22)	2201	5.50	0.461 (0.280)	14.81 (1.85)	184 (84)	55 (12)	29.07 (98.34)
				6th Gear					
151.52 (100.16)	13576 (60.39)	3.71 (5.97)	2201	4.50	0.458 (0.279)	15.09 (1.89)	184 (84)	55 (12)	29.06 (98.41)
				7th Gear					
155.08 (100.75)	11555 (51.29)	4.31 (6.94)	2201	3.64	0.466 (0.284)	15.07 (1.88)	183 (84)	52 (11)	29.07 (98.44)
				8th Gear					
129.25 (96.36)	9745 (43.35)	4.07 (6.55)	2198	3.22	0.462 (0.281)	14.35 (1.80)	184 (84)	56 (13)	29.00 (98.21)
				9th Gear					
128.43 (95.75)	8562 (37.20)	5.16 (8.27)	2199	2.70	0.481 (0.293)	14.38 (1.80)	185 (85)	50 (10)	29.00 (98.21)
				10th Gear					
129.75 (96.74)	7450 (33.58)	6.51 (10.54)	2199	2.44	0.474 (0.288)	14.57 (1.82)	184 (84)	55 (12)	29.03 (98.31)
				11th Gear					
128.27 (95.65)	6352 (28.25)	7.57 (12.19)	2199	2.10	0.485 (0.294)	14.30 (1.82)	185 (85)	57 (14)	28.99 (98.17)
				12th Gear					
131.46 (98.04)	5805 (25.82)	8.43 (13.67)	2201	2.01	0.467 (0.283)	14.79 (1.84)	184 (84)	57 (14)	29.08 (98.48)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 6.7 mph (10.7 km/h)—7th Gear	76.5
Maximum sound level	77.0
Transport speed—no load—15th Gear	77.5
Bystander in 15th Gear	88.0

LUGGING ABILITY IN 10th GEAR

Crankshaft Speed rpm	2199	1991	1783	1539	1321	1094
Pull—lbs (kN)	7430 (33.05)	8602 (38.26)	9696 (43.13)	10145 (45.12)	10414 (46.34)	9535 (42.58)
Increase in Pull %	—	16	30	37	85	29
Power—Hp (kW)	129.75 (96.74)	134.94	134.91 (100.62)	121.10 (90.69)	104.09 (77.62)	82.61 (61.60)
Speed—Mph (km/h)	6.51 (10.54)	7.04 (11.4)	7.72 (12.4)	8.55 (13.76)	8.90 (14.27)	8.24 (13.2)
Slip %	2.44	2.62	2.90	3.36	3.80	2.66

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)	2550 (176)
Location	remote outlet
Hydraulic oil temperature °F (°C)	110 (43)
Location	hydraulic sump
Category	III
Quick attach	Yes

Hitch point distance to ground level in (mm): 9.0 (229); 16.0 (406); 25.0 (635); 33.0 (838); 40.0 (1016)

Lift force on frame lb (kN):

with 1.44 mm ID assist cylinder

Hitch point distance to ground level in (mm): 9.0 (229); 16.0 (406); 25.0 (635); 33.0 (838); 40.0 (1016)

Lift force on frame lb (kN): 9960 (44.4); 10570 (47.0); 10974 (48.8); 10224 (45.5); 9411 (41.9)

with 1.55 mm ID assist cylinder

Hitch point distance to ground level in (mm): 9.0 (229); 16.0 (406); 25.0 (635); 33.0 (838); 40.0 (1016)

Lift force on frame lb (kN): 10518 (46.8); 11456 (50.9); 11176 (49.7); 10793 (48.0); 10041 (44.7)

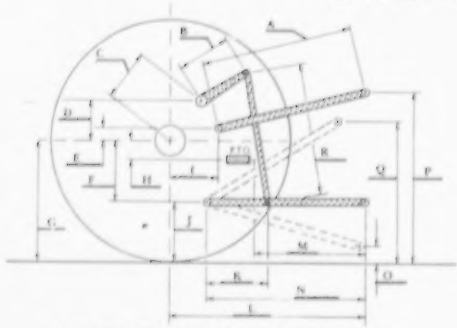
TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No. and size (dia. & sec. dia.)	Two (18.4R42 — 45.7R465)	Two (18.4R42 — 45.7R465)
Ballast—Static load	17,100 lb. (7756 kg)	None
—Cast Iron Static load	2,000 lb. (907 kg)	None
Front Tires—No. and size (dia. & sec. dia.)	Two (14.9R30 — 37.9R765)	Two (14.9R30 — 37.9R765)
Ballast—Cast Iron Static load	1,900 lb. (861 kg)	None
—Cast Iron Static load	1,100 lb. (499 kg)	None
Weight of Tractor		
Static Weight—Rear	19,000 lb. (8618 kg)	17,100 lb. (7756 kg)
—Front	7,000 lb. (3175 kg)	5,900 lb. (2676 kg)
—Total	26,000 lb. (11,793 kg)	23,000 lb. (10,432 kg)

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY III
Quick Attach Yes
Maximum Force Exerted Through Whole Range: 5401 lbs (24.4 kN); *6014 lbs (26.8 kN); **7057 lbs (31.4 kN)

i) Opening pressure of relief valve
Sustained pressure with pump stalled: 2550 psi (176 Bar)
ii) Pump delivery rate at maximum pressure and rated engine speed: 31.8 LPM (120.2 l/min)
iii) Pump delivery 1/4 at maximum
Variable power: 31.7 LPM (120.0 l/min)
Deliver pressure: 1750 psi (121 Bar)
Power: 92.1 Hp (24.1 kW)

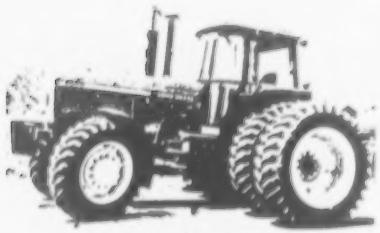
*with 44 mm ID assist cylinder
**with 55 mm ID assist cylinder



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.1	714
B	18.4	468
C	12.9	327
D	12.9	327
E	6.8	172
F	13.0	330
G	35.1	892
H	7.0	177
I	15.1	384
J	22.1	562
K	28.2	716
L	44.5	1124
L	49.5	1251
M	22.5	565
N	38.1	968
O	9.1	231
P	44.1	1121
Q	41.5	1053
R	37.5	946

L = to end of Quick attach



John Deere 4555 Powershift Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1621—SUMMARY 059
JOHN DEERE 4755 POWERSHIFT DIESEL
ALSO JOHN DEERE 4760 POWERSHIFT DIESEL
15 SPEED

POWER TAKE-OFF PERFORMANCE

Power (hp) (kW)	Crank shaft speed (rpm)	Fuel flow (l/h)	Brake hp (kW)	Hp-hr per gal (kW-h/l)	Gear throughout Unless noted
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—998 rpm)					
177.06 (132.04)	2200	9.73 (36.82)	0.3961 (0.2954)	18.20 (4.81)	
Maximum Power (2 Hours)					
178.96 (133.45)	2050	9.61 (36.38)	0.871 (0.650)	18.62 (4.92)	Air temperature °F (°C)
VARYING POWER AND FUEL CONSUMPTION					
177.06 (132.04)	2200	9.73 (36.82)	0.3961 (0.2954)	18.20 (4.81)	74.8 (23.8)
155.14 (115.69)	2265	8.65 (32.72)	0.3568 (0.2661)	17.93 (4.74)	Relative humidity %
117.70 (87.77)	2292	7.16 (27.10)	0.2421 (0.1805)	16.44 (4.34)	89%
79.51 (59.29)	2325	5.51 (20.87)	0.1578 (0.1177)	14.42 (3.81)	Barometer:
40.16 (29.95)	2355	3.96 (14.42)	0.0695 (0.0518)	10.10 (2.67)	29.34" Hg (97.11 kPa)
3.08 (2.30)	2375	2.80 (8.71)	0.0454 (0.0338)	4.04 (1.07)	

Maximum Torque: 565 lb-ft (771 Nm) at 1450 rpm
Maximum Torque Rise: 34.5%
Torque Rise at 1900 engine rpm: 12%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Brake hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant (°C)	Air (°C)	Boost (kPa)	Specific fuel consumption lbs/hp-hr (g/kW-h)
Maximum Power—12th Gear										
147.70 (110.19)	6207 (27.88)	8.84 (14.23)	2201	2.43	0.4351 (0.2644)	15.19 (4.01)	196 (91)	58 (14)		29.65 (18.04)
75% of Full at Maximum Power—12th Gear										
115.29 (85.97)	6197 (27.58)	9.20 (14.81)	2292	1.98	0.3993 (0.2427)	14.14 (3.74)	184 (85)	62 (16)		27.93 (16.99)
50% of Full at Maximum Power—12th Gear										
78.04 (58.20)	8132 (36.18)	6.74 (10.84)	2305	1.52	0.3609 (0.2196)	12.75 (3.37)	181 (83)	58 (14)		29.03 (17.65)
75% of Full at Reduced Engine Speed—13th Gear										
115.49 (86.12)	8707 (38.73)	9.20 (14.81)	2042	1.98	0.3559 (0.2165)	13.07 (3.45)	185 (85)	54 (12)		29.03 (17.65)
50% of Full at Reduced Engine Speed—13th Gear										
78.12 (58.25)	8131 (36.17)	6.76 (10.88)	1865	1.52	0.3219 (0.1958)	11.33 (3.00)	181 (83)	58 (14)		29.03 (17.65)

Location of Test: Centers for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: April-May, 1989

Manufacturer: John Deere Waterloo Works, P.O. Box 5100, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane** No. 51.1 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8501 **Fuel weight** 6.912 lbs/gal (0.828 kg/l) **Oil SAE** 15W-40 **API service classification** CH4D **To motor** 4.915 gal (18.606 l) **Drained from motor** 4.067 gal (17.666 l) **Transmission and hydraulic lubricant** John Deere Hydraulic Fluid **Front axle lubricant** John Deere J.D. 5 Gear Lubricant 85W-140 **Total time engine was operated** 28.0 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *RG6076A102454* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.567" × 4.75" (115.8 mm × 120.7 mm) **Compression ratio** 16.0 to 1 **Displacement** 466 cu in (7634 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prefilter **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate 66.6-72.8 lb/hr (30.2-33.0 kg/hr) **High idle** 2550-2600 rpm **Turbo boost** maximum 16.19 psi (110.131 kPa) as measured 16.5 psi (114 kPa)

CHASSIS: Type front wheel assist **Serial No.** *RW4755P001033* **Tread width** rear 61.0-120.0 (1642 mm) to 115.2" (2938 mm) front 66.8"-119.0" (1692 mm) to 87.4" (2220 mm) **Wheel base** 117.1" (2974 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.42 (2.28) second 2.03 (3.27) third 2.45 (3.95) fourth 3.08 (4.96) fifth 3.55 (5.71) sixth 4.03 (6.49) seventh 4.64 (7.47) eighth 5.35 (8.58) ninth 6.11 (9.89) tenth 6.97 (11.22) eleventh 8.03 (12.93) twelfth 8.91 (14.36) thirteenth 11.12 (17.90) fourteenth 13.36 (21.61) fifteenth 19.25 (30.98) reverse 1.96 (3.16) 2.81 (4.52) 4.27 (6.87) 6.45 (10.38) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 998 rpm at 2200 engine rpm **Unladen tractor mass** 18165 lb (8239 kg)

DRAWBAR PERFORMANCE AT 2050 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Brake hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant (°C)	Air (°C)	Boost (kPa)	Specific fuel consumption lbs/hp-hr (g/kW-h)
5th Gear										
155.55 (99.42)	10452 (73.16)	5.04 (8.11)	2192	14.78	0.5012 (0.3045)	13.77 (3.64)	183 (84)	55 (13)		29.15 (17.73)
6th Gear										
145.68 (108.64)	14852 (66.06)	5.68 (9.14)	2175	6.35	0.4651 (0.2826)	14.08 (3.72)	184 (85)	56 (13)		29.11 (17.70)
7th Gear										
139.31 (103.90)	14502 (64.51)	6.07 (9.77)	2053	0.59	0.4331 (0.2631)	13.55 (3.58)	184 (85)	56 (13)		29.10 (17.69)
8th Gear										
147.55 (110.04)	11615 (51.66)	4.76 (7.66)	2050	4.47	0.4486 (0.2726)	13.61 (3.60)	187 (86)	57 (14)		29.09 (17.69)
9th Gear										
144.21 (107.55)	10921 (48.58)	5.53 (8.90)	2052	4.04	0.4347 (0.2641)	13.68 (3.61)	187 (86)	58 (14)		29.08 (17.68)
10th Gear										
150.57 (112.29)	8929 (39.72)	6.82 (10.98)	2053	5.82	0.4331 (0.2631)	13.58 (3.59)	186 (86)	58 (14)		29.08 (17.68)
11th Gear										
149.54 (111.52)	7595 (33.80)	7.43 (11.96)	2053	2.99	0.4346 (0.2640)	13.53 (3.58)	186 (86)	58 (14)		29.03 (17.65)
12th Gear										
151.91 (113.29)	6901 (30.70)	8.23 (13.25)	2053	2.93	0.4350 (0.2643)	13.83 (3.65)	190 (88)	60 (16)		29.08 (17.68)
13th Gear										
150.92 (112.55)	5746 (25.56)	10.22 (16.45)	2053	2.10	0.4351 (0.2644)	13.53 (3.58)	186 (86)	63 (17)		29.03 (17.65)

DRAWBAR PERFORMANCE AT 2050 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Brake hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant (°C)	Air (°C)	Boost (kPa)	Specific fuel consumption lbs/hp-hr (g/kW-h)
3rd Gear										
131.75 (98.25)	21491 (95.59)	2.39 (3.85)	2292	9.84	0.4431 (0.2693)	14.07 (3.71)	185 (85)	53 (12)		29.02 (17.64)
4th Gear										
135.08 (100.74)	18692 (83.14)	2.84 (4.57)	2364	8.81	0.4417 (0.2684)	13.93 (3.68)	187 (86)	57 (14)		29.01 (17.64)
5th Gear										
145.84 (108.75)	16667 (74.14)	3.27 (5.27)	2333	5.13	0.4351 (0.2644)	13.70 (3.62)	186 (86)	60 (16)		29.05 (17.66)
6th Gear										
151.62 (113.06)	13727 (61.06)	3.92 (6.31)	2053	4.26	0.4337 (0.2636)	13.92 (3.68)	187 (86)	62 (17)		29.11 (17.70)
7th Gear										
149.63 (111.58)	11926 (53.05)	4.58 (7.37)	2053	3.65	0.4337 (0.2636)	13.92 (3.68)	187 (86)	63 (17)		29.11 (17.70)
8th Gear										
145.53 (108.50)	11230 (49.95)	4.81 (7.74)	2050	3.91	0.4334 (0.2634)	13.93 (3.68)	190 (88)	63 (17)		29.10 (17.69)
9th Gear										
140.62 (104.85)	9776 (43.48)	5.62 (9.04)	2053	2.83	0.4324 (0.2628)	13.93 (3.68)	187 (86)	63 (17)		29.08 (17.68)
10th Gear										
146.05 (108.90)	8607 (38.28)	6.40 (10.30)	2053	2.22	0.4351 (0.2644)	13.85 (3.66)	186 (86)	63 (17)		29.03 (17.65)
11th Gear										
141.44 (105.45)	7458 (33.18)	7.39 (11.89)	2053	1.91	0.4359 (0.2649)	13.98 (3.69)	187 (86)	63 (17)		29.08 (17.68)
12th Gear										
150.03 (111.87)	6817 (30.32)	8.24 (13.26)	2053	1.76	0.4351 (0.2644)	13.93 (3.68)	190 (88)	63 (17)		29.03 (17.65)
13th Gear										
145.65 (108.60)	5595 (24.89)	10.30 (16.57)	2054	1.84	0.4351 (0.2644)	13.98 (3.69)	187 (86)	63 (17)		29.03 (17.65)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 125° F (52° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperature. This tractor did not meet manufacturers 5 point hitch capacity claim of 8870 lb (4021 kg) or 9710 lb (4408 kg) with hitch assist cylinder. The pull in 3rd gear (ballasted tractor) was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued: Supplemental sales permit for John Deere 4760 Powershift Diesel, November, 1991.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1621**, Summary 059, December 22, 1989.

LOUIS J. LEVEILLE
Engineer in Charge

K. VON RABENAU
R. D. LARSEN
L. L. BAMESBERGER
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM

MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel consumption lbs/hp hr (g/kW h)	US gal per hour (l/h)	Temp °F (°C)	Rpm	Rpm
			3rd Gear						
128.71 (95.98)	12350 (54.93)	2.29 (3.61)	2951	10.19	0.456 (0.279)	13.45 (49.1)	180 (82)	32 (0.0)	32 (0.0)
135.95 (101.40)	10650 (47.37)	2.71 (4.36)	2952	8.29	0.463 (0.284)	13.73 (51.9)	186 (85)	33 (0.6)	32 (0.0)
135.57 (101.11)	13867 (61.68)	2.30 (3.70)	2241	4.71	0.458 (0.281)	13.77 (52.1)	186 (85)	34 (1.1)	28 (-2.2)
			4th Gear						
143.72 (107.17)	11210 (49.85)	3.06 (4.92)	2952	9.01	0.459 (0.282)	13.31 (50.4)	186 (85)	32 (0.0)	29 (-1.7)
142.88 (106.55)	12350 (54.93)	3.11 (5.00)	2946	9.89	0.454 (0.278)	13.28 (50.2)	186 (85)	32 (0.0)	29 (-1.7)
			5th Gear						
143.79 (107.23)	10550 (46.92)	3.57 (5.74)	2950	8.58	0.462 (0.283)	13.55 (51.3)	190 (88)	32 (0.0)	29 (-1.7)
143.75 (107.20)	8867 (39.44)	4.16 (6.70)	2205	2.91	0.464 (0.285)	13.71 (51.9)	186 (85)	33 (0.6)	24 (-4.4)
			6th Gear						
145.83 (108.77)	7861 (34.97)	5.00 (8.04)	2946	3.54	0.458 (0.281)	13.63 (51.6)	186 (85)	33 (0.6)	24 (-4.4)
			11th Gear						
141.99 (105.91)	6720 (29.89)	7.35 (11.79)	2211	1.70	0.455 (0.279)	13.71 (51.9)	185 (85)	33 (0.6)	24 (-4.4)
			12th Gear						
145.55 (108.56)	6150 (27.35)	8.50 (13.68)	2209	1.54	0.462 (0.283)	13.98 (52.9)	186 (85)	33 (0.6)	24 (-4.4)

TRACTOR SOUND LEVEL WITH CAB **(dB-A)**

Idle (front) at 4.7 mph (7.5 km/h)—7th Gear	75.5
Maximum sound level	77.0
Transport speed—no load—13th Gear	77.0
Bystander at 13th Gear	85.5

LUGGING ABILITY IN 10th GEAR

Crankshaft Speed rpm	2196	1974	1752	1537	1321	1099
Pull—lbs (kN)	7861 (34.97)	8972 (39.91)	10076 (44.75)	10733 (47.95)	10749 (47.85)	10484 (46.27)
Increase in Pull %	0	14	28	37	37	33
Power—Hp (kW)	145.83 (107.27)	147.49 (109.95)	140.78 (105.82)	126.74 (102.99)	117.82 (87.87)	91.94 (68.55)
Speed—Mph (km/h)	3.96 (6.37)	3.51 (5.65)	3.07 (4.93)	2.72 (4.38)	2.32 (3.73)	2.21 (3.56)
Slip %	2.58	2.12	1.58	2.70	2.75	2.74

THREE POINT HITCH PERFORMANCE (SAE Static Test)

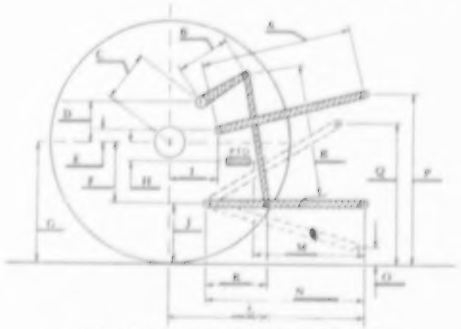
Observed Maximum Pressure psi (bar)					(170—176)	
Location					Hitch end	
Hydraulic Lift temperature °F (°C)					(97—158)	
Location					Transmission sump	
Category					III	
Quick attach					Yes	
Hitch point distance to ground level at rows:	9.9 (226)	10.0 (406)	25.0 (635)	33.6 (858)	40.0 (1016)	
Lift force on frame lb. (kN)	8750 (38.9)	10328 (45.9)	9852 (43.8)	9564 (44.6)	9247 (41.1)	
with 3.94 mm 10 atm cylinder						
Hitch point distance to ground level at rows:	9.9 (226)	10.0 (406)	25.0 (635)	33.6 (858)	40.0 (1016)	
Lift force on frame lb. (kN)	10641 (47.4)	10370 (46.1)	10454 (46.5)	10224 (46.0)	9811 (43.7)	
with 3.55 mm 10 atm cylinder						
Hitch point distance to ground level at rows:	9.9 (226)	10.0 (406)	25.0 (635)	33.7 (856)	40.0 (1016)	
Lift force on frame lb. (kN)	10518 (46.8)	11454 (51.0)	11570 (51.5)	10772 (47.8)	10043 (44.7)	

TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires	[illegible]	[illegible]
Ballast	[illegible]	None
Front Tires	[illegible]	[illegible]
Ballast	[illegible]	None
Height of Drawbar	[illegible]	[illegible]
Static Weight	[illegible]	[illegible]

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY III	
Quick Attach: Yes	
Maximum Force Exerted Through Whole Range	7421 lbs (33.0 kN)
	Power Beyond (33.0 kN)
	7421 lbs (33.0 kN)
a. Opening pressure of relief valve	N/A
Actuated pressure with pump stalled	2550 psi (175 bar)
b. Pump delivery rate at maximum pressure	11.6 LPM (10.4 l/min)
(at: Pump delivery rate at maximum	
Hydraulic power	11.6 LPM (10.4 l/min)
Delivery pressure	2550 psi (175 Bar)
Power	12.3 Hp (13.1 kW)

*with 44 mm 10 atm cylinder
**with 35 mm 10 atm cylinder



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.1	714
B	18.4	468
C	12.9	327
D	12.9	327
E	6.8	172
F	13.0	330
G	36.1	918
H	7.0	177
I	15.1	384
J	27.1	688
K	28.2	716
L	44.5	1130
M	49.5	1257
N	22.5	565
O	36.1	918
P	10.1	257
Q	45.1	1146
R	37.1	943

I: to end of Quick attach

John Deere 4755 Powershift Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Harrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1622—SUMMARY 060
JOHN DEERE 4955 POWERSHIFT DIESEL
ALSO JOHN DEERE 4960 POWERSHIFT DIESEL
15 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crankshaft speed rpm	Fuel/hr l (lb)	Fuel/hp-hr kg/kW-h (lb/hp-h)	Fuel/hp-hr gal (lb/hp-h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—998 rpm)					
202.79 (151.18)	2200	11.02 (41.72)	0.326 (0.229)	18.39 (13.62)	
Maximum Power (2 Hours)					
210.00 (156.60)	1951	10.95 (41.46)	0.301 (0.219)	19.19 (13.71)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
202.79 (151.18)	2200	11.02 (41.72)	0.326 (0.229)	18.39 (13.62)	74°F (23°C)
177.23 (132.16)	2266	10.05 (37.95)	0.291 (0.210)	17.68 (13.08)	Relative humidity
134.91 (100.60)	2297	7.99 (30.23)	0.309 (0.226)	16.89 (12.51)	48%
91.46 (68.20)	2330	6.12 (23.17)	0.402 (0.295)	14.95 (11.06)	Barometer
46.05 (34.34)	2356	4.30 (16.27)	0.645 (0.392)	10.72 (7.93)	28.69" Hg (97.14 kPa)
0.77 (0.57)	2368	2.39 (9.04)	21.517 (13.088)	0.32 (0.08)	

Maximum Torque 670 lb-ft (909 Nm) at 1350 rpm
Maximum Torque Rise 38.5%
Torque Rise at 1000 engine rpm 11%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Fuel Consumption Hp-hr/gal (kW-h/l)	Temp °F (°C) cool mg med	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Power—12th Gear									
176.48 (131.60)	7486 (33.30)	8.84 (14.23)	2197	2.66	0.454 (0.276)	15.48 (11.54)	186 (85)	50 (10)	28.77 (97.43)
75% of Pull at Maximum Power—12th Gear									
137.77 (102.73)	5614 (24.97)	9.20 (14.81)	2277	2.30	0.373 (0.227)	16.69 (12.44)	184 (84)	64 (18)	28.75 (97.36)
50% of Pull at Maximum Power—12th Gear									
99.08 (70.08)	3748 (16.67)	9.40 (15.13)	2312	1.65	0.344 (0.209)	17.85 (13.31)	182 (83)	65 (18)	28.74 (97.32)
75% of Pull at Reduced Engine Speed—12th Gear									
137.83 (102.78)	5620 (25.00)	9.20 (14.80)	1859	2.29	0.454 (0.276)	15.55 (11.59)	187 (86)	64 (18)	28.75 (97.36)
50% of Pull at Reduced Engine Speed—12th Gear									
99.79 (69.04)	3742 (16.65)	9.40 (15.13)	1868	1.56	0.397 (0.303)	15.90 (12.74)	180 (82)	68 (20)	28.74 (97.32)

Location of Test: Center for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: April-June, 1989

Manufacturer: John Deere Waterloo Works, P.O. Box 3500, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 51.1 **Specific gravity converted to 60/60 F** *(15°/15°C)* 0.8301 **Fuel weight** 6.912 lbs/gal *(0.828 kg/l)* **Oil SAE** 15W40 **API service classification** CD/SD **To motor** 4.928 gal *(18.277 l)* **Drained from motor** 4.483 gal *(16.969 l)* **Transmission and hydraulic lubricant** John Deere HyGard fluid **Front axle lubricant** John Deere GL-5 Gear Lubricant 85W-140 **Total time engine was operated** 37.5 hours.

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *RG6076A103190** **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.56" × 4.75" *(115.8 mm × 120.7 mm)* **Compression ratio** 16.0 to 1 **Displacement** 466 cu in *(7634 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prefilter **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 75.8-82.2 lb/hr *(34.2-37.3 kg/hr)* **High idle** 2350-2400 rpm **Turbo boost** nominal 16-19 psi *(110-131 kPa)* as measured 16.7 psi *(115 kPa)*

CHASSIS: Type front wheel assist **Serial No.** *RW4955[P001021* **Tread width** rear 64.6" *(1642 mm)* to 115.7" *(2938 mm)* front 66.6" *(1691 mm)* to 87.8" *(2230 mm)* **Wheel base** 117.1" *(2974 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph** *(km/h)* first 1.42 *(2.29)* second 2.03 *(3.27)* third 2.46 *(3.96)* fourth 3.09 *(4.97)* fifth 3.56 *(5.72)* sixth 4.04 *(6.50)* seventh 4.65 *(7.49)* eighth 5.34 *(8.60)* ninth 6.16 *(9.91)* tenth 6.99 *(11.24)* eleventh 8.05 *(12.95)* twelfth 9.00 *(14.49)* thirteenth 11.14 *(17.93)* fourteenth 15.58 *(25.08)* fifteenth 19.29 *(31.04)* reverse 1.97 *(3.17)*, 2.81 *(4.53)*, 4.27 *(6.88)*, 6.44 *(10.36)* **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 998 rpm at 2200 engine rpm **Unladen tractor mass** 18370 lb *(8332 kg)*.

DRAWBAR PERFORMANCE AT 1950 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Fuel Consumption Hp-hr/gal (kW-h/l)	Temp °F (°C) cool mg med	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
6th Gear									
158.13 (117.92)	17021 (75.71)	3.48 (5.61)	2201	14.57	0.480 (0.292)	14.39 (2.83)	186 (85)	52 (11)	28.78 (97.06)
7th Gear									
171.46 (127.86)	15892 (67.13)	4.26 (6.86)	2165	7.90	0.434 (0.264)	15.92 (3.14)	187 (86)	57 (14)	28.78 (97.06)
8th Gear									
172.81 (128.87)	14398 (64.05)	4.50 (7.24)	1952	6.06	0.440 (0.268)	15.71 (3.09)	186 (85)	50 (10)	28.77 (97.43)
9th Gear									
174.49 (130.12)	12468 (55.46)	5.25 (8.45)	1950	4.87	0.434 (0.264)	15.94 (3.14)	188 (87)	50 (10)	28.77 (97.43)
10th Gear									
177.01 (132.00)	11045 (49.13)	6.01 (9.67)	1952	4.08	0.430 (0.262)	16.06 (3.16)	187 (86)	50 (10)	28.77 (97.43)
11th Gear									
176.21 (131.40)	9500 (42.26)	6.96 (11.19)	1949	3.58	0.427 (0.260)	16.18 (3.19)	188 (87)	50 (10)	28.77 (97.43)
12th Gear									
182.88 (136.33)	8760 (38.96)	7.83 (12.60)	1954	3.02	0.411 (0.250)	16.80 (3.31)	188 (86)	50 (10)	28.77 (97.43)
13th Gear									
177.61 (132.44)	6858 (30.50)	9.71 (15.63)	1947	2.48	0.427 (0.260)	16.17 (3.19)	188 (87)	51 (11)	28.78 (97.46)

DRAWBAR PERFORMANCE AT 1950 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Fuel Consumption Hp-hr/gal (kW-h/l)	Temp °F (°C) cool mg med	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
3rd Gear									
145.69 (108.64)	23715 (105.49)	2.30 (3.71)	2264	9.88	0.484 (0.295)	14.27 (2.81)	185 (85)	50 (10)	28.83 (97.63)
4th Gear									
167.70 (125.05)	22457 (99.89)	2.80 (4.51)	2146	7.69	0.458 (0.279)	15.08 (2.97)	188 (86)	50 (10)	28.84 (97.66)
5th Gear									
171.50 (127.89)	20951 (90.52)	3.16 (5.09)	2058	5.62	0.449 (0.273)	15.41 (3.04)	187 (86)	53 (12)	28.86 (97.73)
6th Gear									
174.65 (130.23)	18589 (82.69)	3.52 (5.67)	2001	4.68	0.434 (0.264)	15.94 (3.14)	187 (86)	64 (18)	28.66 (97.05)
7th Gear									
176.56 (131.66)	16602 (73.85)	3.99 (6.42)	1952	4.07	0.428 (0.260)	16.14 (3.18)	189 (87)	65 (18)	28.67 (97.08)
8th Gear									
172.76 (128.83)	14090 (62.68)	4.63 (7.45)	1955	3.10	0.438 (0.267)	15.77 (3.11)	188 (86)	60 (16)	28.66 (97.05)
9th Gear									
173.90 (129.68)	12182 (54.19)	5.35 (8.62)	1951	2.74	0.436 (0.265)	15.87 (3.13)	189 (87)	52 (11)	29.01 (98.23)
10th Gear									
174.83 (130.37)	10785 (47.97)	6.08 (9.78)	1947	2.58	0.433 (0.264)	15.95 (3.14)	188 (87)	52 (11)	29.01 (98.24)
11th Gear									
172.83 (128.88)	9219 (41.01)	7.03 (11.31)	1949	2.29	0.438 (0.267)	15.78 (3.11)	189 (87)	53 (12)	29.02 (98.27)
12th Gear									
179.11 (133.56)	8509 (37.85)	7.89 (12.70)	1955	1.93	0.424 (0.258)	16.02 (3.22)	188 (87)	54 (12)	29.01 (98.24)
13th Gear									
175.15 (129.10)	6822 (29.45)	9.80 (15.78)	1956	1.74	0.437 (0.266)	15.85 (3.12)	188 (87)	57 (14)	29.00 (98.21)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 141° F *(61° C)*. This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. This tractor did not meet manufacturers 3 point lift capacity claim of 9710 lb *(4404 kg)*. The pull in 3rd gear (ballasted tractor) was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued. Supplemental sales permit for John Deere 4960 Powershift Diesel, November, 1991.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1622**, Summary 060, December 22, 1989.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp hr (g/kW h)	Hp hr per gal (kW h/l)	Temp °F (°C) cooling med	Air cleaner inlet	Barom inch Hg (kPa)
				3rd Gear					
147.00 (109.62)	25742 (105.61)	2.32 (3.74)	2268	8.97	0.479 (0.291)	14.44 (2.84)	184 (84)	50 (10)	28.85 (97.63)
				4th Gear					
167.25 (124.72)	21627 (96.20)	2.90 (4.67)	2200	6.79	0.460 (0.280)	15.04 (2.96)	186 (86)	53 (12)	28.84 (97.56)
				5th Gear					
170.97 (127.49)	18770 (83.49)	3.42 (5.50)	2205	4.68	0.446 (0.271)	15.49 (3.05)	187 (86)	55 (12)	28.85 (97.70)
				6th Gear					
173.51 (129.38)	16659 (74.01)	3.91 (6.29)	2202	3.99	0.440 (0.268)	15.70 (3.09)	186 (85)	65 (17)	28.66 (97.05)
				7th Gear					
171.86 (128.15)	14254 (63.40)	4.52 (7.28)	2197	3.37	0.445 (0.270)	15.55 (3.06)	186 (86)	65 (18)	28.67 (97.09)
				8th Gear					
167.25 (124.72)	11969 (53.24)	5.24 (8.43)	2201	2.74	0.457 (0.278)	15.14 (2.98)	186 (86)	60 (16)	28.66 (97.05)
				9th Gear					
168.96 (124.50)	10347 (46.02)	6.05 (9.74)	2199	2.29	0.455 (0.277)	15.18 (2.99)	187 (86)	52 (11)	29.00 (98.21)
				10th Gear					
167.80 (125.13)	9131 (40.61)	6.89 (11.09)	2201	2.02	0.455 (0.277)	15.18 (2.99)	187 (86)	52 (11)	29.01 (98.24)
				11th Gear					
166.86 (124.42)	7864 (34.98)	7.96 (12.81)	2200	1.93	0.458 (0.279)	15.08 (2.97)	188 (86)	54 (12)	29.03 (98.31)
				12th Gear					
170.68 (127.27)	7181 (31.94)	8.91 (14.34)	2200	1.83	0.447 (0.272)	15.47 (3.05)	186 (86)	56 (13)	29.05 (98.37)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h)—7th Gear	76.5
Maximum sound level	77.5
Transport speed—no load—15th Gear	79.0
Bystander is: 15th Gear	87.0

LUGGING ABILITY IN 10th GEAR

Crankshaft Speed rpm	2201	1981	1760	1539	1325	1104
Pull—lbs (kN)	9131 (40.61)	10579 (47.08)	11754 (52.28)	12731 (56.63)	12792 (56.90)	10434 (46.41)
Increase in Pull %	0	16	29	39	40	14
Power—Hp (kW)	167.80 (125.13)	171.63 (130.22)	171.96 (128.23)	162.45 (121.14)	140.26 (104.59)	95.90 (71.51)
Speed—Mph (km/h)	6.89 (11.09)	6.19 (9.96)	5.49 (8.83)	4.79 (7.70)	4.11 (6.62)	3.45 (5.55)
Slip %	2.02	2.29	2.47	2.85	2.85	2.47

TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi (kPa)	Four 20.8R42, **, 12 (85)	Two 20.8R42, **, 16 (110)
Ballast—Dual (total)	1950 lb (885 kg)	None
—Cast Iron (total)	2000 lb (907 kg)	None
Front Tires—No., size, ply & psi (kPa)	Two 16.9R30, ***, 24 (165)	Two 16.9R30, ***, 24 (165)
Ballast—Test Equip (total)	245 lb (111 kg)	None
—Cast Iron (total)	2100 lb (953 kg)	None
Height of Drawbar	20 in (510 mm)	19.0 in (485 mm)
Static Weight—Rear	15355 lb (6970 kg)	11830 lb (5366 kg)
—Front	9300 lb (4252 kg)	6560 lb (2966 kg)
—Total	24655 lb (11186 kg)	18370 lb (8312 kg)

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)				2550 (176)	
Location				remote outlet	
Hydraulic oil temperature °F(°C)				124 (51)	
Location				transmission sump	
Category				III	
Quick attach				Yes	
Hitch point distance to ground level in (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	9860 (43.9)	10570 (47.0)	10854 (48.3)	10224 (45.5)	9411 (41.9)
with 1.55 mm lift assist cylinder					
Hitch point distance to ground level in (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	10518 (46.8)	11434 (50.9)	11576 (51.5)	10737 (47.8)	10041 (44.7)
with 2.44 mm lift assist cylinders					
Hitch point distance to ground level in (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	11375 (50.6)	11972 (53.3)	12216 (54.3)	11617 (51.7)	10851 (47.4)
with 2.55 mm lift assist cylinders					
Hitch point distance to ground level in (mm)	9.1 (231)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	12534 (55.8)	13426 (59.7)	13720 (61.0)	12729 (56.6)	11775 (52.4)

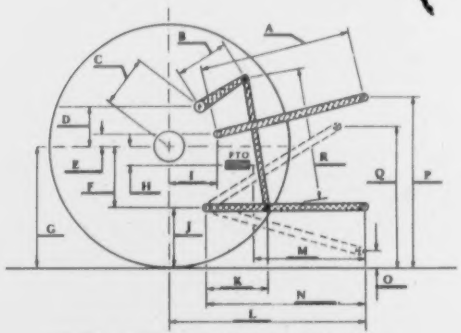
THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY III
Quick Attach: Yes

Maximum Force Exerted Through Whole Range:	6614 lbs	(29.4 kN)
	*7057 lbs	(31.4 kN)
	**7486 lbs	(33.3 kN)
	***8274 lbs	(36.8 kN)
i) Opening pressure of relief valve	NA	
Sustained pressure with pump stalled	2550 psi	(176 Bar)
ii) Pump delivery rate at minimum pressure	30.6 GPM	(115.8 l/min)
iii) Pump delivery rate at maximum hydraulic power	29.6 GPM	(112.0 l/min)
Delivery pressure	1750 psi	(121 Bar)
Power	30.2 Hp	(22.5 kW)

*with 1.55 mm lift assist cylinder
**with 2.44 mm lift assist cylinders
***with 2.55 mm lift assist cylinders

John Deere 4955 Powershift Diesel



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.1	714
B	18.4	468
C	12.9	327
D	12.9	327
E	6.8	172
F	13.0	330
G	36.1	918
H	7.0	177
I	15.1	384
J	23.1	588
K	28.2	716
L	44.3	1124
L'	49.3	1251
M	22.3	565
N	38.1	968
O	10.1	257
P	45.1	1146
Q	42.5	1080
R	37.3	946

L' to end of Quick Attach

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1629—SUMMARY 067
JOHN DEERE 4555 QUADRANGE DIESEL
ALSO JOHN DEERE 4560 QUADRANGE DIESEL
16 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—998 rpm)					
156.83 (116.93)	2200	9.01 (34.11)	0.397 (0.241)	17.41 (3.83)	
Maximum Power (2 Hours)					
162.53 (121.20)	1950	8.50 (32.17)	0.378 (0.230)	18.27 (4.02)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
156.83 (116.93)	2200	9.01 (34.11)	0.397 (0.241)	17.41 (3.83)	75°F (24°C)
157.16 (102.28)	2264	8.16 (30.90)	0.411 (0.250)	16.80 (3.31)	Relative humidity
104.51 (77.93)	2293	6.73 (25.47)	0.445 (0.271)	15.53 (3.06)	56%
70.77 (52.77)	2331	5.50 (20.85)	0.517 (0.315)	13.56 (2.63)	Barometer
35.65 (26.59)	2358	3.91 (14.79)	0.757 (0.461)	9.12 (1.80)	29.80" Hg (97.84 kPa)
1.29 (0.96)	2368	2.52 (9.53)	15.501 (8.213)	0.51 (0.10)	

Maximum Torque 505 lb ft (684 Nm) at 1451 rpm
Maximum Torque Rise 35%
Torque Rise at 1900 engine rpm 24%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool eng oil	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Power—8th (C2) Gear									
159.99 (104.39)	7885 (35.07)	6.66 (10.72)	2200	4.56	0.441 (0.270)	15.55 (3.06)	185 (85)	70 (21)	29.80 (97.82)
75% of Pull at Maximum Power—8th (C2) Gear									
140.00 (92.09)	5914 (26.31)	6.94 (11.21)	2275	3.01	0.475 (0.290)	14.53 (2.86)	182 (83)	75 (24)	29.89 (97.83)
50% of Pull at Maximum Power—8th (C2) Gear									
75.39 (56.22)	3947 (17.55)	7.16 (11.51)	2311	2.15	0.542 (0.330)	12.75 (2.51)	180 (82)	75 (24)	29.89 (97.83)
75% of Pull at Reduced Engine Speed—10th (D1) Gear									
110.17 (82.13)	5038 (26.12)	6.98 (11.24)	1792	3.01	0.512 (0.309)	15.65 (3.08)	183 (84)	75 (24)	29.89 (97.83)
50% of Pull at Reduced Engine Speed—10th (D1) Gear									
75.17 (56.05)	5058 (17.54)	7.16 (11.53)	1811	2.15	0.485 (0.295)	16.31 (3.22)	179 (81)	75 (24)	29.89 (97.83)

Location of Test: Center for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: September-October, 1989

Manufacturer: John Deere Waterloo Works, P.O. Box 3500, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel Cetane No. 51.1 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8300 **Fuel weight** 6.910 lbs/gal *(0.828 kg/l)* **Oil SAE** 15W40 **API service classification** CD/SD **To motor** 4.823 gal *(18.257 l)* **Drained from motor** 4.598 gal *(17.406 l)* **Transmission and hydraulic lubricant** John Deere HyGard fluid **Total time engine was operated** 25.0 hours.

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *RG60761[169007* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.56" × 4.75" *(115.8 mm × 120.7 mm)* **Compression ratio** 16.0 to 1 **Displacement** 466 cu in *(7634 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge and prefilter **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 59.9-65.4 lb/hr *(27.2-29.7 kg/hr)* **High idle** 2350-2400 rpm **Turbo boost** nominal 15-18 psi *(103-124 kPa)* as measured 17.0 psi *(117 kPa)*

CHASSIS: Type standard **Serial No.** *RW4555H001833* **Tread width** rear 62.0" *(1574 mm)* to 115.7" *(2938 mm)* front 61.0" *(1550 mm)* to 85.0" *(2160 mm)* **Wheel base** 118.5" *(3010 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 2.11 (3.39) second 2.67 (4.30) third 3.80 (6.12) fourth 4.71 (7.58) fifth 4.83 (7.78) sixth 5.55 (8.90) seventh 5.97 (9.62) eighth 7.02 (11.30) ninth 8.50 (13.69) tenth 8.95 (14.42) eleventh 9.99 (16.08) twelfth 10.80 (17.39) thirteenth 11.37 (18.31) fourteenth 12.68 (20.42) fifteenth 16.19 (26.07) sixteenth 20.56 (33.10) reverse 3.97 (6.39), 5.04 (8.11), 8.87 (14.28), 10.42 (16.78), 11.26 (18.14), 13.28 (21.31) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 998 rpm at 2200 engine rpm **Unladen tractor mass** 15840 lb *(7185 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

DRAWBAR PERFORMANCE AT 1950 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool eng oil	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
3rd (A3) Gear									
115.40 (86.05)	13035 (57.99)	3.32 (5.34)	2264	14.55	0.509 (0.310)	13.58 (2.87)	182 (83)	57 (14)	28.92 (97.93)
4th (B1) Gear									
136.10 (101.49)	11719 (52.13)	4.36 (7.01)	2198	6.64	0.458 (0.279)	15.09 (2.97)	183 (84)	64 (18)	28.90 (97.87)
5th (A4) Gear									
137.16 (102.28)	11954 (53.17)	4.50 (6.92)	2151	7.96	0.452 (0.275)	15.28 (3.01)	184 (84)	66 (19)	28.90 (97.87)
6th (C1) Gear									
138.57 (103.33)	11077 (49.27)	4.69 (7.55)	2020	6.79	0.447 (0.272)	15.46 (3.05)	187 (86)	67 (19)	28.90 (97.87)
7th (B2) Gear									
142.01 (105.90)	10866 (48.33)	4.90 (7.89)	1950	6.71	0.434 (0.264)	15.93 (3.14)	188 (86)	69 (21)	28.90 (97.87)
8th (C2) Gear									
145.04 (108.62)	9161 (40.75)	5.86 (9.42)	1952	5.27	0.430 (0.262)	16.07 (3.16)	187 (86)	69 (21)	28.90 (97.87)
9th (B3) Gear									
141.02 (105.16)	7575 (33.70)	7.17 (11.54)	1948	3.94	0.435 (0.265)	15.88 (3.13)	187 (86)	70 (21)	28.90 (97.87)
10th (D1) Gear									
141.15 (105.24)	6985 (31.07)	7.58 (12.19)	1949	3.77	0.437 (0.266)	15.83 (3.12)	187 (86)	72 (22)	28.90 (97.87)
11th (C3) Gear									
141.17 (105.27)	6235 (27.73)	8.39 (13.66)	1949	3.27	0.435 (0.265)	15.88 (3.13)	187 (86)	72 (22)	28.90 (97.87)

DRAWBAR PERFORMANCE AT 1950 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool eng oil	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
1st (A1) Gear									
89.02 (66.38)	17784 (79.10)	1.88 (3.02)	2293	19.70	0.541 (0.329)	12.77 (2.52)	180 (82)	56 (13)	29.08 (98.48)
2nd (A2) Gear									
110.66 (82.52)	17681 (78.65)	2.35 (3.78)	2269	14.17	0.510 (0.310)	13.56 (2.67)	181 (83)	53 (12)	29.08 (98.48)
3rd (A3) Gear									
140.21 (104.56)	15808 (70.32)	3.55 (5.71)	2077	6.59	0.445 (0.270)	15.54 (3.06)	185 (85)	60 (16)	29.08 (98.48)
4th (B1) Gear									
142.79 (106.48)	13441 (59.79)	3.98 (6.41)	1979	5.14	0.453 (0.263)	15.95 (3.14)	187 (86)	64 (18)	29.08 (98.48)
5th (A4) Gear									
144.57 (107.86)	13440 (59.78)	4.05 (6.48)	1951	5.14	0.426 (0.259)	16.23 (3.20)	187 (86)	65 (18)	29.08 (98.48)
6th (C1) Gear									
142.36 (106.16)	11460 (50.97)	4.66 (7.50)	1955	4.25	0.434 (0.264)	15.95 (3.14)	187 (86)	66 (19)	29.08 (98.48)
7th (B2) Gear									
146.25 (109.06)	10897 (48.47)	5.05 (8.10)	1947	4.06	0.422 (0.256)	16.39 (3.23)	188 (88)	67 (19)	29.09 (98.51)
8th (C2) Gear									
145.89 (108.79)	9350 (41.74)	5.97 (9.61)	1955	3.39	0.419 (0.255)	16.48 (3.25)	188 (87)	71 (22)	29.09 (98.51)
9th (B3) Gear									
142.95 (106.60)	7370 (32.78)	7.27 (11.71)	1949	2.70	0.430 (0.261)	16.07 (3.17)	189 (87)	73 (23)	29.07 (98.44)
10th (D1) Gear									
141.94 (105.85)	6945 (30.89)	7.06 (12.94)	1949	2.53	0.431 (0.262)	16.05 (3.16)	189 (87)	74 (23)	29.06 (98.41)
11th (C3) Gear									
142.39 (106.18)	6219 (27.66)	8.50 (13.82)	1950	2.27	0.433 (0.263)	15.98 (3.14)	189 (87)	74 (23)	29.05 (98.37)

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 125° F (52° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. This tractor did not meet manufacturers 3 point lift capacity claim of 8870 lb *(4023 kg)* or 9710 lb *(4404 kg)* with lift assist cylinder. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued: Supplemental sales permit for John Deere 4560 Quadrange Diesel, November, 1991

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1629**, Summary 067, December 22, 1989.

LOUIS J. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) coolant avg	Air dry bulb	Barom inch (kPa)
				2nd (A2) Gear					
110.49 (82.39)	17774 (79.06)	2.35 (3.79)	2268	14.71	0.511 (0.311)	13.51 (2.66)	181 (83)	51 (11)	29.08 (98.48)
				3rd (A3) Gear					
138.94 (103.61)	14657 (65.21)	3.56 (5.73)	2198	5.55	0.449 (0.273)	15.39 (3.03)	184 (84)	58 (14)	29.08 (98.48)
				4th (B1) Gear					
139.85 (104.27)	11725 (52.16)	4.47 (7.20)	2202	4.51	0.444 (0.270)	15.56 (3.06)	186 (85)	60 (17)	29.08 (98.48)
				5th (A4) Gear					
140.72 (104.96)	11488 (51.10)	4.59 (7.39)	2205	4.29	0.440 (0.267)	15.72 (3.10)	185 (85)	64 (18)	29.08 (98.48)
				6th (C1) Gear					
139.96 (104.37)	9932 (44.18)	5.28 (8.50)	2200	3.56	0.445 (0.270)	15.54 (3.06)	186 (85)	65 (18)	29.08 (98.48)
				7th (B2) Gear					
141.77 (105.72)	9291 (41.33)	5.72 (9.21)	2199	3.39	0.441 (0.268)	15.66 (3.08)	186 (86)	68 (20)	29.09 (98.51)
				8th (C2) Gear					
141.47 (105.49)	7848 (34.91)	6.76 (10.88)	2198	2.79	0.439 (0.267)	15.74 (3.10)	186 (86)	70 (21)	29.09 (98.51)
				9th (B3) Gear					
138.52 (103.29)	6509 (28.96)	8.29 (13.35)	2198	2.27	0.449 (0.273)	15.40 (3.03)	187 (86)	72 (22)	29.08 (98.48)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h)—4th (B1) Gear	76.0
Maximum sound level	76.0
Transport speed—no load—16th (D4) Gear	77.0
Bystander in 16th (D4) Gear	85.0

LUGGING ABILITY IN 7th (B2) GEAR

Crankshaft Speed rpm	2199	1981	1764	1540	1323	1101
Pull—lbs (kN)	9291 (41.33)	10682 (47.52)	11760 (52.31)	12708 (56.53)	12040 (56.23)	12244 (54.46)
Increase in Pull %	0	15	27	37	30	32
Power—Hp (kW)	141.77 (105.72)	145.91 (108.80)	142.40 (106.18)	133.64 (99.66)	114.29 (85.23)	92.24 (68.78)
Speed—Mph (km/h)	5.72 (9.21)	5.12 (8.24)	4.54 (7.31)	3.96 (6.37)	3.39 (5.46)	2.82 (4.55)
Slip %	3.39	3.89	4.56	4.89	4.73	4.73

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)				2580 (178)	
Location				remote outlet	
Hydraulic oil temperature °F(°C)				158 (70)	
Location				transmission sump	
Category				III	
Quick attach				Yes	
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	8760 (38.7)	9228 (41.0)	9432 (42.0)	8944 (39.8)	8283 (36.8)
with 1.44 mm. lift assist cylinder					
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	9860 (43.9)	10570 (47.0)	10854 (48.3)	10224 (45.5)	9411 (41.9)
with 1.55 mm. lift assist cylinder					
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	10518 (46.8)	11434 (50.9)	11576 (51.5)	10757 (47.8)	10051 (44.7)

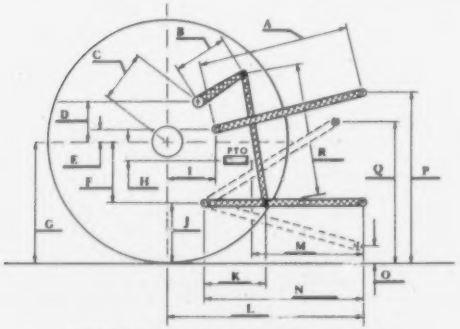
TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No., size, phs & psi (kPa)	Four 18.4R42, **, 16 (110)	Two 18.4R42, **, 22 (150)
Ballast—Dual (total)	1710 lb (776 kg)	None
—Cast Iron (total)	1000 lb (454 kg)	None
Front Tires—No., size, phs & psi (kPa)	Two 14P, 16.1, 10, 44 (105)	Two 14L-16.1, 10, 44 (105)
Ballast—Liquid (total)	None	None
—Ten Equip (total)	195 lb (88 kg)	None
Height of Drawbar	20 in (470 mm)	25.5 in (595 mm)
Static Weight—Rear	13950 lb (6119 kg)	11020 lb (4999 kg)
—Front	4815 lb (2184 kg)	4820 lb (2186 kg)
—Total	18765 lb (8503 kg)	15840 lb (7185 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY III
Quick Attach Yes

Maximum Force Exerted Through Whole Range	5821 lbs	(25.9 kN)
	*6614 lbs	(29.4 kN)
	**7057 lbs	(31.4 kN)
i) Opening pressure of relief valve	N.A.	
Sustained pressure with pump stalled	2580 psi	(178 Bar)
ii) Pump delivery rate at minimum pressure	35.5 GPM	(133.6 l/min)
iii) Pump delivery rate at maximum hydraulic power	33.9 GPM	(128.1 l/min)
Delivery pressure	1750 psi	(121 Bar)
Power	33.6 Hp	(25.0 kW)

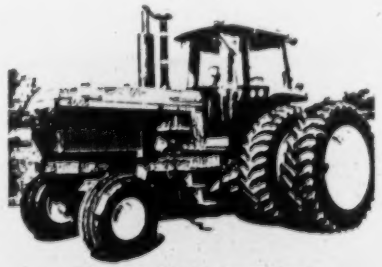
*with 44 mm lift assist cylinder
**with 55 mm lift assist cylinder



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.1	714
B	18.4	468
C	12.9	327
D	12.9	327
E	6.8	172
F	13.0	330
G	35.1	892
H	7.0	177
I	15.1	384
J	22.1	562
K	28.2	716
L	44.3	1124
L'	49.3	1251
M	22.3	565
N	38.1	968
O	9.1	231
P	44.1	1121
Q	41.5	1053
R	37.3	946

L' to end of Quick Attach



John Deere 4555 Quadrange Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1630—SUMMARY 068
JOHN DEERE 4755 QUADRANGE DIESEL
ALSO JOHN DEERE 4760 QUADRANGE DIESEL
16 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Calc'd Hp (kW)	Belog hr Hp/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
		Rated Engine Speed—(PTO speed—996 rpm)			
177.11 (132.07)	2200	9.75 (36.82)	0.379 (0.231)	18.21 (3.59)	
		Maximum Power (2 Hours)			
180.35 (134.49)	2000	9.55 (36.17)	0.308 (0.223)	18.88 (3.72)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
177.11 (132.07)	2200	9.75 (36.82)	0.379 (0.231)	18.21 (3.59)	75°F (24°C)
154.31 (115.07)	2255	9.77 (37.20)	0.395 (0.239)	17.60 (3.47)	Relative humidity
118.72 (87.05)	2281	7.25 (27.45)	0.429 (0.261)	16.10 (3.17)	56%
79.32 (59.15)	2317	5.51 (20.87)	0.480 (0.292)	14.39 (2.83)	Barometer
40.11 (29.91)	2351	2.99 (11.32)	0.688 (0.419)	10.04 (1.98)	28.90" Hg (97.87 kPa)
0.77 (0.58)	2383	0.39 (0.04)	21.356 (12.990)	0.32 (0.06)	

Maximum Torque 575 lb.-ft (779 Nm) at 1400 rpm
Maximum Torque Rise 35.9%
Torque Rise at 1000 engine rpm 14%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption Belog hr Hp/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool-ing med	Temp °F (°C) Air dry bulb	Baromet-ric inch Hg (kPa)
Maximum Power—8th (C2) Gear									
156.97 (117.09)	8441 (37.55)	6.97 (11.22)	2196	2.44	0.422 (0.257)	16.37 (3.23)	186 (86)	58 (14)	29.27 (99.12)
75% of Pull at Maximum Power—8th (C2) Gear									
122.77 (91.55)	6329 (28.15)	7.28 (11.72)	2266	2.28	0.448 (0.273)	15.43 (3.04)	186 (85)	60 (21)	29.21 (98.92)
50% of Pull at Maximum Power—8th (C2) Gear									
85.99 (62.63)	4225 (18.78)	7.45 (12.00)	2304	1.47	0.516 (0.314)	15.60 (3.08)	180 (82)	60 (15)	29.21 (98.92)
75% of Pull at Reduced Engine Speed—10th (D1) Gear									
125.00 (91.72)	6832 (30.17)	7.28 (11.72)	1777	2.19	0.425 (0.259)	16.25 (3.20)	186 (85)	69 (21)	29.29 (99.18)
50% of Pull at Reduced Engine Speed—10th (D1) Gear									
84.10 (62.71)	4292 (18.83)	7.45 (11.99)	1804	1.47	0.463 (0.282)	14.92 (2.94)	180 (82)	69 (21)	29.29 (99.18)

Location of Test: Center for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: September-October, 1989

Manufacturer: John Deere Waterloo Works, P.O. Box 3500, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 51.1 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8300 **Fuel weight** 6.910 lbs/gal (0.828 kg/l) **Oil SAE** 15W40 **API service classification** CD/SD **To motor** 4.344 gal (16.442 l) **Drained from motor** 4.101 gal (15.526 l) **Transmission and hydraulic lubricant** John Deere HyGard fluid **Total time engine was operated** 19.0 hours.

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *RG6076A109849* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.56" × 4.75" (115.8 mm × 120.7 mm) **Compression ratio** 16.0 to 1 **Displacement** 466 cu in (7634 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prefilter **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 66.6-72.8 lb/hr (30.2-33.0 kg/hr) **High idle** 2350-2400 rpm **Turbo boost** nominal 16-19 psi (110-131 kPa) as measured 17.0 psi (117 kPa).

CHASSIS: Type standard **Serial No.** *RW4755H001852* **Tread width** rear 64.6" (1642 mm) to 115.7" (2938 mm) front 61.0" (1550 mm) to 85.0" (2160 mm) **Wheel base** 118.5" (3010 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 2.17 (3.49) second 2.75 (4.43) third 3.91 (6.30) fourth 4.84 (7.80) fifth 4.97 (8.00) sixth 5.69 (9.16) seventh 6.15 (9.90) eighth 7.22 (11.63) ninth 8.75 (14.09) tenth 9.22 (14.84) eleventh 10.28 (16.55) twelfth 11.11 (17.89) thirteenth 11.71 (18.85) fourteenth 15.05 (21.01) fifteenth 16.66 (26.83) sixteenth 21.16 (34.07) reverse 4.09 (6.58), 5.19 (8.35), 9.13 (14.70), 10.72 (17.27), 11.59 (18.67), 15.62 (21.93) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 998 rpm at 2200 engine rpm **Unladen tractor mass** 16050 lb (7271 kg).

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

DRAWBAR PERFORMANCE AT 2000 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption Belog hr Hp/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool-ing med	Temp °F (°C) Air dry bulb	Baromet-ric inch Hg (kPa)
				3rd (A3) Gear					
127.37 (94.98)	13903 (61.84)	3.43 (5.52)	2240	14.94	0.491 (0.298)	14.09 (2.73)	182 (89)	58 (15)	29.27 (99.12)
				4th (B1) Gear					
153.68 (114.60)	15605 (37.83)	4.45 (7.15)	2150	8.51	0.455 (0.285)	15.87 (3.13)	185 (85)	51 (11)	29.27 (99.12)
				5th (A4) Gear					
155.19 (114.23)	12851 (57.16)	4.47 (7.19)	2154	7.39	0.456 (0.264)	15.66 (3.13)	185 (85)	54 (13)	29.27 (99.12)
				6th (C1) Gear					
156.06 (116.37)	11485 (51.09)	5.10 (8.20)	2079	9.34	0.492 (0.297)	16.56 (3.22)	186 (85)	56 (13)	29.27 (99.12)
				7th (B2) Gear					
158.91 (118.50)	11172 (49.70)	5.55 (8.92)	2008	4.99	0.415 (0.252)	16.66 (3.28)	186 (86)	56 (13)	29.27 (99.12)
				8th (C2) Gear					
160.43 (119.63)	9540 (42.43)	6.51 (10.15)	1950	3.02	0.400 (0.249)	16.90 (3.33)	188 (86)	57 (14)	29.27 (99.12)
				9th (B3) Gear					
158.10 (117.90)	7988 (35.08)	7.74 (12.46)	2000	3.00	0.416 (0.253)	16.68 (3.27)	188 (87)	59 (15)	29.27 (99.12)
				10th (D1) Gear					
156.74 (116.88)	7299 (32.08)	8.15 (13.12)	1999	2.73	0.423 (0.257)	16.54 (3.22)	188 (86)	61 (16)	29.27 (99.12)

DRAWBAR PERFORMANCE AT 2000 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption Belog hr Hp/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool-ing med	Temp °F (°C) Air dry bulb	Baromet-ric inch Hg (kPa)
				2nd (A2) Gear					
131.04 (98.59)	19567 (86.99)	2.53 (4.07)	2248	10.25	0.468 (0.285)	14.77 (2.91)	185 (84)	64 (18)	28.86 (97.80)
				3rd (A3) Gear					
152.56 (113.76)	15980 (70.93)	3.61 (5.81)	2156	4.99	0.458 (0.287)	15.77 (3.11)	187 (86)	72 (22)	28.87 (97.77)
				4th (B1) Gear					
154.09 (115.57)	13261 (58.99)	4.58 (7.05)	2092	3.71	0.429 (0.261)	16.19 (3.18)	187 (86)	73 (23)	28.86 (97.73)
				5th (A4) Gear					
157.80 (117.99)	13192 (58.68)	4.68 (7.51)	2055	3.60	0.422 (0.257)	16.58 (3.23)	188 (86)	74 (23)	28.86 (97.73)
				6th (C1) Gear					
156.08 (116.34)	11602 (51.83)	5.07 (8.08)	2001	3.27	0.423 (0.257)	16.53 (3.22)	188 (86)	75 (24)	28.85 (97.70)
				7th (B2) Gear					
159.37 (118.84)	10996 (48.91)	5.64 (8.75)	1999	2.91	0.412 (0.251)	16.70 (3.30)	189 (87)	75 (24)	28.85 (97.70)
				8th (C2) Gear					
158.28 (118.03)	9239 (41.09)	6.43 (10.35)	2002	2.56	0.416 (0.253)	16.60 (3.27)	189 (88)	76 (24)	28.84 (97.66)
				9th (B3) Gear					
155.16 (115.70)	7432 (33.06)	7.81 (12.60)	2002	1.92	0.424 (0.258)	16.51 (3.23)	189 (87)	77 (25)	28.85 (97.67)
				10th (D1) Gear					
154.01 (114.84)	7000 (31.14)	8.25 (13.28)	2000	1.85	0.427 (0.260)	16.18 (3.19)	188 (87)	77 (25)	28.92 (97.89)

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 128° F (53° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. This tractor did not meet manufacturers 5 point lift capacity claim of 8870 lb (4023 kg) or 9710 lb (4404 kg) with lift assist cylinder. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued. Supplemental sales permit for John Deere 4760 Quadrange Diesel, November, 1991.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1630**, Summary 068, December 22, 1989.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp/hr (g/kW h)	Hp hr gal (kW h/l)	Temp °F (°C) cool. sug cond	Air dry bulb	Barom inch Hg (kPa)
				2nd (A2) Gear					
150.62 (97.01)	19999 (88.93)	2.46 (3.96)	2240	12.70	0.477 (0.290)	14.50 (2.86)	183 (89)	60 (16)	28.80 (97.80)
				3rd (A3) Gear					
152.18 (113.48)	15217 (67.69)	3.75 (6.04)	2201	4.58	0.441 (0.268)	15.06 (3.00)	186 (86)	72 (22)	28.87 (97.73)
				4th (B1) Gear					
152.92 (113.98)	13196 (58.69)	4.70 (7.56)	2201	3.27	0.457 (0.278)	15.02 (2.96)	186 (86)	72 (22)	28.87 (97.73)
				5th (A4) Gear					
154.97 (115.50)	12097 (53.81)	4.92 (7.78)	2200	3.27	0.452 (0.263)	16.00 (3.15)	187 (86)	74 (23)	28.86 (97.73)
				6th (C1) Gear					
154.15 (114.99)	10444 (46.45)	5.54 (8.91)	2197	2.92	0.436 (0.265)	15.85 (3.12)	188 (86)	74 (23)	28.85 (97.70)
				7th (B2) Gear					
155.88 (116.24)	9750 (43.20)	6.01 (9.67)	2201	2.75	0.429 (0.261)	16.09 (3.17)	187 (86)	75 (24)	28.84 (97.66)
				8th (C2) Gear					
155.95 (116.29)	8250 (36.74)	7.08 (11.40)	2198	2.28	0.429 (0.261)	16.10 (3.17)	187 (86)	75 (24)	28.81 (97.66)
				9th (B3) Gear					
151.98 (113.33)	6604 (29.38)	8.65 (13.92)	2202	1.85	0.441 (0.268)	15.68 (3.09)	187 (86)	77 (25)	28.85 (97.63)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h)—4th (B1) Gear	76.0
Maximum sound level	76.0
Transport speed—no load—10th (D4) Gear	76.5
Bystander in 10th (D4) Gear	80.5

LUGGING ABILITY IN 7th (B2) GEAR

Crankshaft Speed rpm	2201	1980	1760	1540	1320	1101
Pull—lbs (kN)	9750 (43.20)	11055 (49.18)	12225 (54.38)	13051 (58.05)	13500 (59.16)	12252 (54.50)
Increase in Pull %	0	14	26	34	37	26
Power—Hp (kW)	155.88 (116.24)	158.75 (118.38)	155.59 (116.03)	144.61 (107.83)	126.21 (94.11)	97.52 (72.57)
Speed—Mph (km/h)	6.01 (9.67)	5.58 (8.67)	4.77 (7.68)	4.16 (6.69)	3.56 (5.73)	2.98 (4.79)
Slip %	2.75	5.09	9.27	5.80	9.80	5.45

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)	2560 (177)
Location	remote outlet
Hydraulic oil temperature °F(°C)	151 (55)
Location	transmission sump
Category	III
Quick attach	Yes

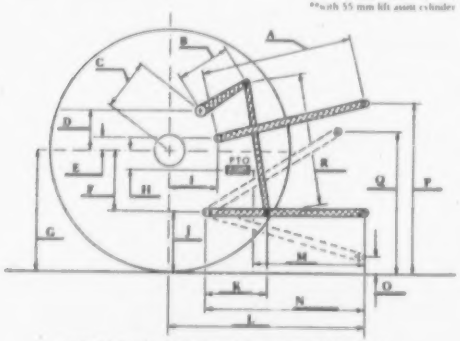
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	8760 (38.7)	9228 (41.0)	9452 (42.0)	8944 (39.8)	8293 (36.8)
with 1-44 mm lift assist cylinder					
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	9868 (43.9)	10570 (47.0)	10854 (48.3)	10224 (45.5)	9414 (41.9)
with 1-55 mm lift assist cylinder					
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb (kN)	10518 (46.8)	11454 (50.9)	11576 (51.5)	10797 (48.0)	10044 (44.7)

TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi (kPa)	Four 20.8R42, **, 16 (85)	Two 20.8R42, **, 16 (125)
Ballast—Dual (total)	1998 lb (889 kg)	None
—Cast Iron (total)	2688 lb (907 kg)	None
Front Tires—No. size, ply & psi (kPa)	Two 14L-16.1, 10, 44 (305)	Two 14L-16.1, 10, 44 (305)
Ballast—Liquid (total)	None	None
—Tire Equip (total)	600 lb (154 kg)	None
Height of Drawbar	27.5 in (670 mm)	25.5 in (650 mm)
Static Weight—Rear	19450 lb (7008 kg)	11165 lb (5064 kg)
—Front	6870 lb (2209 kg)	6865 lb (2207 kg)
—Total	26320 lb (9217 kg)	18050 lb (7271 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY III
Quick Attach: Yes
Maximum force Exerted Through Whole Range: 5021 lbs (29.9 kN) *6614 lbs (29.4 kN) **7057 lbs (31.4 kN)

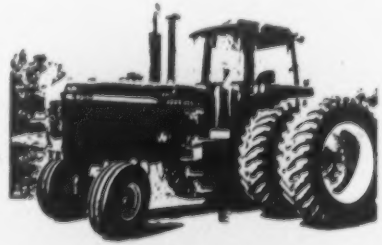
i) Opening pressure of relief valve: N/A
Sustained pressure with pump stalled: 2560 psi (177 Bar)
ii) Pump delivery rate at minimum pressure: 55.2 GPM (139.2 l/min)
iii) Pump delivery rate at maximum hydraulic power: 53.7 GPM (127.6 l/min)
Delivery pressure: 1750 psi (121 Bar)
Power: 50.6 Hp (29.7 kW)
*with 44 mm lift assist cylinder
**with 55 mm lift assist cylinder



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.1	714
B	18.4	468
C	12.9	327
D	12.9	327
E	6.8	172
F	13.0	330
G	36.1	918
H	7.0	177
I	15.1	384
J	23.1	588
K	28.2	716
L	44.3	1124
L'	49.3	1251
M	22.3	565
N	38.1	968
O	10.1	257
P	45.1	1146
Q	42.5	1080
R	37.3	946

L' to end of Quick Attach



John Deere 4755 Quadrange Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1642—SUMMARY 080
FORD 3230 8 x 2 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel/hr (l/h)	Rdbp hp (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
Rated Engine Speed—(PTO speed—600 rpm)					
92.93 (68.11)	2000	2.11 (7.99)	0.457 (0.278)	15.31 (3.02)	
Standard PTO Speed (PTO—540 RPM)					
90.99 (67.11)	1900	1.95 (7.40)	0.441 (0.268)	15.85 (3.12)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
92.93 (68.11)	2000	2.11 (7.99)	0.457 (0.278)	15.31 (3.02)	75°F (24°C)
28.00 (21.07)	2100	1.07 (4.03)	0.479 (0.292)	11.70 (2.31)	Relative humidity
21.76 (16.24)	2107	1.72 (6.50)	0.554 (0.337)	12.69 (2.50)	wet
14.62 (10.90)	2130	1.52 (5.76)	0.657 (0.399)	10.65 (2.10)	Barometer
7.36 (5.49)	2145	1.12 (4.22)	1.040 (0.643)	6.61 (1.30)	29.06" Hg (98.40 kPa)
0.12 (0.09)	2167	0.92 (3.48)	60.0586 (36.3571)	0.15 (0.03)	

Maximum Torque 113 lb ft (153 Nm) at 998 rpm
Maximum Torque Rise 32.6%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Rdbp hp (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool eng	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th (III) Gear									
29.05 (19.41)	1584 (7.04)	6.16 (9.92)	2001	5.78	0.578 (0.352)	12.11 (2.56)	179 (82)	60 (16)	28.72 (97.26)
75% of Pull at Maximum Power—5th (III) Gear									
20.67 (15.42)	1187 (5.28)	6.53 (10.51)	2112	3.56	0.651 (0.396)	10.75 (2.28)	176 (80)	55 (13)	28.85 (97.70)
50% of Pull at Maximum Power—5th (III) Gear									
14.02 (10.46)	792 (3.52)	6.64 (10.69)	2128	2.14	0.600 (0.365)	8.71 (1.72)	180 (82)	53 (12)	28.85 (97.70)
75% of Pull at Reduced Engine Speed—6th (IV) Gear									
20.67 (15.42)	1189 (5.29)	6.52 (10.49)	1689	3.56	0.575 (0.350)	12.17 (2.58)	177 (81)	53 (12)	28.85 (97.70)
50% of Pull at Reduced Engine Speed—6th (IV) Gear									
14.00 (10.44)	792 (3.52)	6.63 (10.67)	1702	2.62	0.603 (0.367)	10.10 (2.14)	176 (80)	53 (12)	28.85 (97.70)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: April 9-25, 1991

Manufacturer: FORD NEW HOLLAND, 500 Diller Avenue, New Holland, PA 17557

FUEL OIL and TIME: **Fuel** No. 2 Diesel Cetane No. 53.9 **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8509 **Fuel weight** 6.993 lbs/gal *(0.838 kg/l)* **Oil SAE** 15W-40 **API service classification** SG/CD **To motor** 1.127 gal *(4.266 l)* **Drained from motor** 1.007 gal *(3.811 l)* **Transmission and final drive lubricant** Ford M2C 134 D fluid **Front axle lubricant** Ford M2C 134 D fluid **Total time engine was operated** 21.5 hours

ENGINE: **Make** Ford Diesel **Type** three cylinder vertical **Serial No.** *B2B3617* **Crankshaft** lengthwise **Rated rpm** 2000 **Bore and stroke** (as specified) 4.4" × 4.2" *(111.8 mm × 106.7 mm)* **Compression ratio** 16.3 to 1 **Displacement** 192 cu in *(3142 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** radiator for power steering fluid **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: **Fuel rate** 14.5-16.5 lb/hr *(6.6-7.5 kg/hr)* **High idle** 2150-2200 rpm

CHASSIS: **Type** front wheel assist **Serial No.** *BC76439* **Tread width** rear 56.0" *(1422 mm)* to 79.8" *(2026 mm)* front 55.0" *(1396 mm)* to 73.0" *(1855 mm)* **Wheel base** 84.1" *(2136 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.73 *(2.79)* second 2.16 *(3.48)* third 3.79 *(6.10)* fourth 5.16 *(8.30)* fifth 6.18 *(9.94)* sixth 7.71 *(12.41)* seventh 13.52 *(21.76)* eighth 18.19 *(29.75)* reverse 2.49 *(4.00)*, 8.80 *(14.30)* **Clutch** single dry disc operated by foot pedal **Brakes** wet multiple disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1800 engine rpm **Unladen tractor mass** 5374 lb *(2438 kg)*

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Rdbp hp (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool eng	Air dry bulb	Barom inch Hg (kPa)
2nd (2) Gear									
22.78 (16.99)	4275 (19.01)	2.40 (3.85)	2001	14.66	0.611 (0.372)	10.92 (2.15)	178 (81)	61 (16)	28.81 (97.56)
3rd (3) Gear									
25.71 (19.17)	2857 (12.71)	3.66 (5.88)	2000	6.86	0.585 (0.356)	11.98 (2.36)	180 (82)	62 (17)	28.71 (97.22)
4th (4) Gear									
25.93 (19.34)	1985 (8.86)	5.08 (8.18)	1998	4.67	0.584 (0.356)	11.98 (2.36)	177 (80)	55 (13)	28.74 (97.32)
5th (III) Gear									
29.05 (19.41)	1584 (7.04)	6.16 (9.92)	2001	5.78	0.578 (0.352)	12.11 (2.56)	179 (82)	60 (16)	28.72 (97.26)
6th (2H) Gear									
21.91 (16.34)	1208 (5.37)	7.74 (12.45)	1998	2.95	0.600 (0.365)	11.65 (2.46)	180 (82)	67 (19)	28.69 (97.16)

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Rdbp hp (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool eng	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th (III) Gear									
26.20 (19.54)	1650 (7.34)	5.92 (9.53)	2000	6.46	0.575 (0.350)	12.35 (2.59)	175 (79)	58 (14)	28.72 (97.26)
75% of Pull at Maximum Power—5th (III) Gear									
21.06 (15.70)	1206 (5.36)	6.51 (10.29)	2112	5.26	0.636 (0.387)	11.00 (2.31)	180 (82)	56 (13)	28.84 (97.66)
50% of Pull at Maximum Power—5th (III) Gear									
14.11 (10.52)	803 (3.57)	6.49 (10.44)	2128	3.74	0.725 (0.441)	9.02 (1.91)	177 (81)	56 (13)	28.84 (97.66)
75% of Pull at Reduced Engine Speed—6th (2H) Gear									
21.03 (15.68)	1242 (5.52)	6.55 (10.22)	1695	5.20	0.566 (0.344)	12.35 (2.59)	175 (79)	56 (13)	28.84 (97.66)
50% of Pull at Reduced Engine Speed—6th (2H) Gear									
14.15 (10.55)	832 (3.70)	6.51 (10.48)	1711	3.74	0.666 (0.405)	10.49 (2.22)	174 (79)	56 (13)	28.84 (97.66)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump was maintained at 135° F (57° C). The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1642**, Summary 080, July 15, 1991

LOUIS I. LEVELICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (g/kW h)	Fuel Consumption Hp hr per gal (kW h/l)	Temp °F (°C) cool ing med	Air cle aner	Barom in Hg (kPa)
				2nd (2L) Gear					
15.55 (11.45)	2685 (12.02)	2.00 (3.21)	2120	14.90	0.705 (0.454)	9.38 (1.85)	175 (79)	69 (18)	28.85 (97.70)
				3rd (3L) Gear					
24.52 (18.28)	2770 (12.32)	3.32 (5.34)	2001	14.57	0.614 (0.374)	11.39 (2.24)	180 (82)	84 (28)	28.70 (97.19)
				4th (4L) Gear					
25.71 (19.17)	1984 (8.82)	4.86 (7.82)	2005	8.11	0.584 (0.355)	11.97 (2.36)	178 (81)	56 (13)	28.75 (97.29)
				5th (1H) Gear					
26.20 (19.54)	1659 (7.38)	5.92 (9.53)	2000	6.46	0.575 (0.350)	12.15 (2.39)	175 (79)	58 (14)	28.72 (97.26)
				6th (2H) Gear					
25.64 (19.12)	1284 (5.71)	7.49 (12.06)	1999	5.20	0.568 (0.346)	11.90 (2.34)	179 (82)	65 (18)	28.70 (97.19)

TIRES AND WEIGHT — **Tested Without Ballast**

Rear Tires—No., size, psi (kPa)	4 ea 13.6-28, 8- (4.95)
Front Tires—No., size, psi (kPa)	2 ea 8.5-24, 8- (110)
Height of Drawbar	15.0 in (380 mm)
Static Weight with Operator—Rear	5321 lb (2408 kg)
—Front	2213 lb (1004 kg)
—Total	5536 lb (2512 kg)

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)	2640 (179)
Location	remote outlet
Hydraulic oil temperature °F(°C)	169 (76)
Location	rear axle sump
Category	I
Quick attach	none

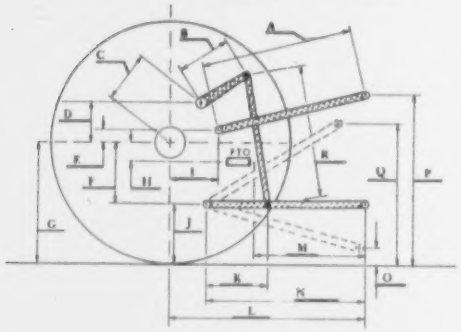
Hitch point distance to ground level in. (mm)	8.3 (211)	15.0 (330)	17.7 (450)	22.4 (569)	27.2 (691)	32.1 (815)
Lift force on frame lb (kN)	3271 (14.5)	3589 (16.0)	3772 (16.8)	3791 (16.9)	3676 (16.3)	3475 (15.4)

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

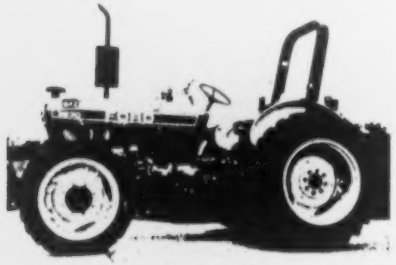
CATEGORY: I
Quick Attach: none

Maximum Force Exerted Through Whole Range	3056 lbs	(13.6 kN)
i) Opening pressure of relief valve	NA	
Sustained pressure of the open relief valve	2610 psi	(180 bar)
ii) Pump delivery rate at minimum pressure	8.0 GPM	(30.0 l/min)
iii) Pump delivery rate at maximum hydraulic power	6.1 GPM	(23.2 l/min)
Delivery pressure	2400 psi	(165 bar)
Power	8.5 HP	(6.4 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.3	719
B	10.0	254
C	12.9	327
D	10.1	257
E	7.5	191
F	8.0	203
G	24.0	610
H	4.7	120
I	8.7	222
J	16.0	407
K	18.9	481
L	36.7	931
M	20.9	530
N	34.0	864
O	8.0	203
P	34.1	867
Q	33.1	841
R	29.1	740



Ford 3230 8 x 2 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1643—SUMMARY 081
FORD 3430 8 x 2 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel/hr l/h (kg/kW h)	Belly hr l/h (kg/kW h)	Hp hr g/d (kW h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—600 rpm)					
58.48 (28.70)	2000	2.55 (9.65)	0.663 (0.282)	15.11 (2.98)	
Standard PTO Speed (PTO—540 RPM)					
56.92 (27.51)	1800	2.38 (9.00)	0.450 (0.274)	15.53 (3.06)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
58.48 (28.70)	2000	2.55 (9.65)	0.663 (0.282)	15.11 (2.98)	25°C (77°F)
55.85 (25.71)	2076	2.23 (8.44)	0.464 (0.200)	17.95 (3.54)	Relative humidity
25.87 (19.29)	2109	1.89 (7.15)	0.5101 (0.169)	13.71 (2.70)	41%
17.56 (12.94)	2124	1.50 (5.68)	0.695 (0.368)	11.56 (2.28)	Barometer
8.85 (6.58)	2147	1.12 (4.22)	0.883 (0.937)	7.92 (1.56)	28.92" Hg (97.93 kPa)
0.12 (0.09)	2170	0.82 (3.08)	15.065 (27.923)	0.15 (0.03)	

Maximum Torque 121 lb ft (165 Nm) at 1152 rpm
Maximum Torque Rise 20.0%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption: Belly hr l/h (kg/kW h)	Hp hr g/d (kW h)	Temp °F (°C) cool eng mod	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th (III) Gear									
51.05 (21.61)	1950 (8.67)	6.09 (9.80)	2001	4.65	0.558 (0.330)	12.54 (2.47)	185 (85)	53 (12)	28.78 (97.46)
75% of Pull at Maximum Power—5th (III) Gear									
28.92 (18.57)	1465 (6.51)	6.38 (10.26)	2081	3.91	0.597 (0.363)	11.72 (2.31)	182 (83)	67 (19)	29.02 (98.25)
50% of Pull at Maximum Power—5th (III) Gear									
16.98 (12.66)	975 (4.33)	6.51 (10.48)	2101	2.85	0.710 (0.432)	9.85 (1.94)	180 (82)	67 (19)	29.02 (98.25)
75% of Pull at Reduced Engine Speed—6th (2H) Gear									
24.92 (18.58)	1067 (6.53)	6.52 (10.49)	1664	3.91	0.548 (0.333)	12.76 (2.51)	180 (82)	67 (19)	29.02 (98.25)
50% of Pull at Reduced Engine Speed—6th (2H) Gear									
16.98 (12.66)	974 (4.33)	6.51 (10.47)	1682	3.85	0.626 (0.381)	11.17 (2.20)	177 (81)	67 (19)	29.02 (98.25)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: April 16-25, 1991

Manufacturer: FORD NEW HOLLAND, 500 Diller Avenue, New Holland PA 17557

FUEL OIL and TIME: **Fuel** No. 2 Diesel **Cetane No.** 53.9 **Specific gravity converted to 60°/60 F (15°/15°C)** 0.8391 **Fuel weight** 6.995 lbs/gal (0.838 kg/l) **Oil SAE** 15W-40 **API service classification** SG/CF **To motor** 1.161 gal (4.396 l) **Drained from motor** 1.061 gal (4.015 l) **Transmission and final drive lubricant** Ford M2C 134-D fluid **Front axle lubricant** Ford M2C 134-D fluid **Total time engine was operated** 15.0 hours

ENGINE: **Make** Ford Diesel **Type** three cylinder vertical **Serial No.** *B2P3648* **Crankshaft** lengthwise **Rated rpm** 2000 **Bore and stroke** (as specified) 4.4" × 4.2" (111.8 mm × 106.7 mm) **Compression ratio** 16.3 to 1 **Displacement** 192 cu in (3142 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** radiator for power steering fluid **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: **Fuel rate:** 16.5-18.5 lb/hr (7.5-8.4 kg/hr) **High idle:** 2150-2200 rpm

CHASSIS: **Type** front wheel assist **Serial No.** *BC764588* **Tread width** rear 56.0" (1423 mm) to 79.8" (2026 mm) front 55.0" (1396 mm) to 73.0" (1855 mm) **Wheel base** 84.1" (2136 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.73 (2.79) second 2.16 (3.48) third 3.79 (6.10) fourth 5.16 (8.30) fifth 6.18 (9.94) sixth 7.71 (12.41) seventh 13.52 (21.76) eighth 18.09 (29.75) reverse 2.49 (4.00), 8.89 (14.30) **Clutch** single dry disc operated by foot pedal **Brakes** wet multiple disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1800 engine rpm **Unloaded tractor mass** 5428 lb (2462 kg)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption: Belly hr l/h (kg/kW h)	Hp hr g/d (kW h)	Temp °F (°C) cool eng mod	Air dry bulb	Barom inch Hg (kPa)
2nd (2L) Gear									
24.14 (18.00)	4577 (20.36)	1.98 (3.18)	2002	14.85	0.624 (0.370)	11.21 (2.21)	181 (83)	66 (18)	28.97 (98.05)
3rd (3L) Gear									
30.85 (23.00)	3224 (14.34)	3.59 (5.77)	2003	8.59	0.572 (0.340)	12.25 (2.41)	183 (84)	52 (11)	28.28 (97.06)
4th (4L) Gear									
31.52 (23.50)	2595 (10.38)	5.03 (8.10)	2004	5.55	0.565 (0.342)	12.43 (2.45)	185 (85)	54 (12)	28.70 (97.19)
5th (III) Gear									
31.66 (23.61)	1950 (8.67)	6.09 (9.80)	2003	4.65	0.558 (0.330)	12.54 (2.47)	185 (85)	53 (12)	28.78 (97.46)
6th (2H) Gear									
30.75 (22.93)	1501 (6.67)	7.68 (12.36)	2001	3.58	0.581 (0.353)	12.04 (2.37)	182 (83)	52 (11)	28.78 (97.46)

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption: Belly hr l/h (kg/kW h)	Hp hr g/d (kW h)	Temp °F (°C) cool eng mod	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th (III) Gear									
51.59 (21.56)	2046 (9.10)	5.79 (9.32)	1998	8.36	0.556 (0.330)	12.57 (2.48)	183 (84)	53 (12)	28.79 (97.49)
75% of Pull at Maximum Power—5th (III) Gear									
25.27 (18.84)	1535 (6.83)	6.17 (9.93)	2081	6.20	0.580 (0.350)	11.86 (2.34)	181 (83)	66 (18)	29.05 (98.34)
50% of Pull at Maximum Power—5th (III) Gear									
17.28 (12.88)	1024 (4.55)	6.55 (10.54)	2099	4.85	0.604 (0.422)	10.67 (1.98)	181 (83)	66 (18)	29.04 (98.34)
75% of Pull at Reduced Engine Speed—6th (2H) Gear									
25.25 (18.82)	1554 (6.82)	6.17 (9.93)	1671	6.08	0.541 (0.329)	12.93 (2.55)	179 (82)	66 (18)	29.04 (98.34)
50% of Pull at Reduced Engine Speed—6th (2H) Gear									
17.30 (12.90)	1024 (4.55)	6.54 (10.39)	1685	4.83	0.613 (0.373)	10.41 (2.23)	176 (80)	66 (18)	29.05 (98.34)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption: Belly hr l/h (kg/kW h)	Hp hr g/d (kW h)	Temp °F (°C) cool eng mod	Air dry bulb	Barom inch Hg (kPa)
3rd (3L) Gear									
27.51 (20.51)	3030 (13.48)	3.40 (5.48)	2004	14.92	0.604 (0.367)	11.58 (2.34)	181 (83)	67 (19)	28.99 (98.12)
6th (2L) Gear									
30.14 (22.70)	2416 (10.75)	4.73 (7.60)	2002	10.62	0.579 (0.352)	12.09 (2.38)	183 (84)	54 (12)	28.78 (97.46)
5th (III) Gear									
31.59 (23.56)	2046 (9.10)	5.79 (9.32)	1996	8.36	0.556 (0.330)	12.57 (2.48)	183 (84)	53 (12)	28.79 (97.49)
6th (2H) Gear									
31.29 (23.34)	1502 (7.03)	7.42 (11.94)	2000	6.03	0.567 (0.345)	12.33 (2.43)	182 (83)	52 (11)	28.78 (97.46)

TIRES AND WEIGHT

Rear Tires	Size, size, psi & psi (kPa)
Front Tires	Size, size, psi & psi (kPa)
Height of Drawbar	
Static Weight with Operator	Rear
	Front
	Total

Tested Without Ballast
Tires 18.4 x 38 x 14 (46 x 97 x 36 cm)
Tires 8.3-24 x 10 (210 x 610 mm)
15.0 in (380 mm)
7064 lb (3176 kg)
2230 lb (1002 kg)
9294 lb (4217 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump was maintained at 140° F (60° C). The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1643**, Summary 081, July 15, 1991

LOUIS L. LEVEILLEUX
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (SAE Static Test)

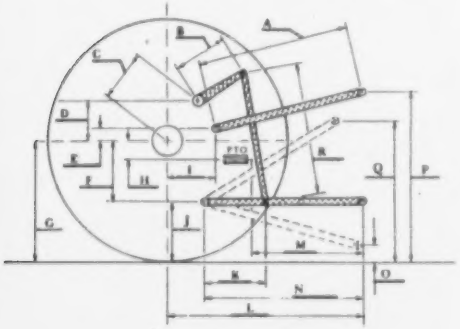
Observed Maximum Pressure psi (bar)				2600 (179)		
Location				remote outlet		
Hydraulic oil temperature °F(°C)				109 (76)		
Location				rear axle sump		
Category				I		
Quick attach				none		
Hitch point distance to ground level in (mm)	8.5 (211)	13.0 (330)	17.7 (450)	22.4 (569)	27.2 (690)	32.1 (815)
Lift force on frame lb (kN)	9271 (41.3)	9309 (41.4)	9272 (41.3)	9291 (41.3)	9176 (40.8)	9171 (40.8)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

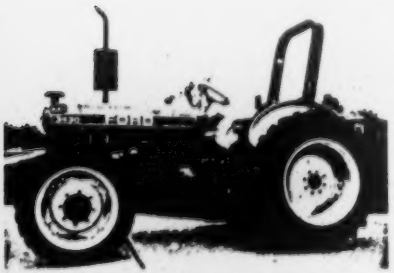
CATEGORY I
Quick Attach: none

Maximum Force Exerted Through Whole Range	7056 lbs (31.4 kN)
i) Opening pressure of relief valve	NA
Sustained pressure of the open relief valve	2630 psi (181 bar)
ii) Pump delivery rate at maximum pressure	7.9 GPM (29.9 l/min)
iii) Pump delivery rate at maximum hydraulic power	7.2 GPM (27.3 l/min)
Delivery pressure	2500 psi (172 bar)
Power	6.8 HP (6.8 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.3	719
B	10.8	274
C	12.9	327
D	10.1	257
E	7.5	191
F	8.0	203
G	24.0	610
H	4.7	120
I	8.7	222
J	16.0	407
K	18.9	481
L	36.7	931
M	20.9	530
N	34.0	864
O	8.0	203
P	36.1	867
Q	33.1	841
R	29.1	740



Ford 3430 8 × 2 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1644—SUMMARY 082
FORD 3930 8 x 2 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crankshaft speed rpm	Fuel/hr (l/hr)	lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/l)	Mean Atmosphere Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—600 rpm)					
45.85 (34.19)	1999	2.85 (10.79)	0.431 (0.262)	16.23 (3.29)	
Standard PTO Speed (PTO—540 RPM)					
45.05 (33.59)	1868	2.65 (10.03)	0.424 (0.258)	16.48 (3.29)	Air temperature 76°F (24°C)
VARYING POWER AND FUEL CONSUMPTION					
45.85 (34.19)	1999	2.85 (10.79)	0.431 (0.262)	16.23 (3.29)	
40.50 (30.20)	2005	2.57 (9.74)	0.444 (0.270)	15.76 (3.13)	Relative humidity 44%
30.85 (23.01)	2199	2.10 (7.96)	0.476 (0.290)	14.60 (2.90)	
20.05 (14.95)	2427	1.69 (6.42)	0.552 (0.336)	12.67 (2.50)	Barometer 29.63" Hg (99.95 kPa)
10.42 (7.77)	2147	1.29 (4.88)	0.806 (0.490)	8.68 (1.72)	
0.12 (0.09)	2199	0.82 (3.09)	45.985 (27.972)	0.15 (0.03)	

Maximum Torque 157 lb ft (186 Nm) at 1101 rpm
Maximum Torque Rise 14.9%

FUEL CONSUMPTION CHARACTERISTICS
DRAWBAR PERFORMANCE
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/l)	Temp °F (°C) cool. avg	Air Acc	Air inch (mm) Hg (kPa)
Maximum Power—5th (10th) Gear									
38.18 (28.47)	2412 (10.73)	5.04 (8.36)	2001	5.74	0.525 (0.318)	15.57 (3.31)	178 (81)	65 (18)	29.05 (98.31)
75% of Full at Maximum Power—5th (10th) Gear									
30.50 (22.80)	1810 (8.05)	6.28 (10.11)	2004	4.95	0.552 (0.336)	12.56 (2.67)	175 (79)	69 (20)	29.06 (98.31)
50% of Full at Maximum Power—6th (11th) Gear									
20.76 (15.48)	1208 (5.37)	6.45 (10.37)	2112	5.11	0.652 (0.397)	10.72 (2.28)	173 (78)	69 (20)	29.06 (98.31)
75% of Full at Reduced Engine Speed—6th (11th) Gear									
30.20 (22.52)	1810 (8.05)	6.26 (10.07)	1992	4.24	0.546 (0.333)	12.54 (2.67)	173 (78)	69 (20)	29.06 (98.31)
50% of Full at Reduced Engine Speed—6th (11th) Gear									
20.05 (14.95)	1213 (5.39)	6.45 (10.38)	1992	5.17	0.560 (0.341)	12.46 (2.54)	172 (78)	69 (20)	29.06 (98.31)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: April 8-25, 1991

Manufacturer: FORD NEW HOLLAND, 500 Diller Avenue, New Holland, PA 17557

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 53.9 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8399 **Fuel weight** 6.995 lbs/gal (0.838 kg/l) **Oil SAE** 15W-40 **API service classification** SG/CF **To motor** 1.199 gal (4.538 l) **Drained from motor** 1.098 gal (4.158 l) **Transmission and final drive lubricant** Ford M2C 134-D fluid **Front axle lubricant** Ford M2C 134-D fluid **Total time engine was operated** 25.0 hours.

ENGINE: Make Ford Diesel **Type** three cylinder vertical **Serial No.** *C2938777* **Crankshaft** lengthwise **Rated rpm** 2000 **Bore and stroke** (as specified) 4.4" × 4.4" (111.8 mm × 111.8 mm) **Compression ratio** 16.3 to 1 **Displacement** 201 cu in (3293 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** radiator for power steering fluid **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

ENGINE OPERATING PARAMETERS: Fuel rate 19.0-21.5 lb/hr (8.6-9.8 kg/hr) **High idle** 2150-2200 rpm.

CHASSIS: Type front wheel assist **Serial No.** *BD 76140* **Tread width** rear 56.0" (1423 mm) to 79.8" (2026 mm) front 55.0" (1396 mm) to 73.0" (1855 mm) **Wheel base** 81.1" (2136 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.73 (2.79) second 2.16 (3.48) third 2.79 (4.49) fourth 3.46 (5.57) fifth 4.48 (7.21) sixth 5.56 (8.95) seventh 6.93 (11.15) eighth 8.93 (14.37) ninth 11.52 (18.54) tenth 14.37 (23.13) eleventh 18.49 (29.75) reverse 2.49 (4.00), 8.99 (14.46) **Clutch** single dry disc operated by foot pedal **Brakes** wet multiple disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1900 engine rpm **Unladen tractor mass** 5426 lb (2461 kg).

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	eng oil	Air cleaner inlet	Barom inch Hg (kPa)
					2nd (II) Gear					
75.21 (56.08)	4867 (21.58)	1.97 (3.17)	2992	14.55	0.605 (0.368)	11.55 (2.29)	176 (80)	55 (13)	28.90 (97.83)	
					3rd (III) Gear					
56.80 (27.64)	5908 (17.74)	5.46 (5.57)	2980	10.25	0.545 (0.331)	12.85 (2.55)	181 (83)	51 (11)	29.05 (98.32)	
					4th (IV) Gear					
37.47 (27.94)	2874 (12.78)	6.89 (7.87)	2981	7.14	0.547 (0.332)	13.03 (2.57)	179 (82)	48 (9)	28.94 (97.83)	
					5th (III) Gear					
58.18 (26.47)	2812 (16.73)	5.94 (9.56)	2981	5.74	0.523 (0.318)	13.37 (2.64)	178 (81)	45 (8)	29.05 (98.32)	
					5th (IV) Gear					
51.24 (27.71)	1856 (8.25)	7.53 (12.11)	2981	5.61	0.539 (0.328)	12.98 (2.56)	174 (79)	44 (7)	29.04 (98.11)	

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	eng oil	Air cleaner inlet	Barom inch Hg (kPa)
					Maximum Power—5th (III) Gear					
58.05 (28.60)	2511 (11.17)	5.69 (9.15)	1998	8.21	0.528 (0.321)	13.26 (2.63)	179 (82)	48 (9)	28.95 (98.01)	
					75% of Pull at Maximum Power—5th (III) Gear					
59.62 (22.84)	1864 (8.38)	6.10 (9.82)	2084	5.87	0.554 (0.337)	12.63 (2.50)	172 (78)	56 (13)	28.91 (97.90)	
					50% of Pull at Maximum Power—5th (III) Gear					
51.05 (15.72)	1256 (5.59)	6.29 (10.13)	2110	3.95	0.635 (0.386)	11.01 (2.17)	172 (78)	56 (13)	28.94 (97.99)	
					75% of Pull at Reduced Engine Speed—6th (IV) Gear					
59.66 (22.82)	1885 (8.38)	6.09 (9.80)	1671	5.92	0.543 (0.330)	13.04 (2.60)	175 (79)	56 (13)	28.94 (97.99)	
					50% of Pull at Reduced Engine Speed—6th (IV) Gear					
39.05 (15.66)	1254 (5.58)	6.28 (10.10)	1687	3.82	0.562 (0.342)	12.74 (2.54)	171 (77)	56 (13)	28.94 (97.99)	

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	eng oil	Air cleaner inlet	Barom inch Hg (kPa)
					2nd (II) Gear					
82.95 (24.77)	3692 (16.42)	4.95 (7.96)	2965	14.72	0.560 (0.340)	12.31 (2.43)	175 (79)	52 (11)	29.05 (98.32)	
					3rd (III) Gear					
56.82 (27.65)	2983 (13.27)	5.65 (9.09)	2985	10.84	0.545 (0.332)	12.85 (2.55)	180 (82)	51 (11)	29.00 (98.15)	
					5th (III) Gear					
58.05 (28.60)	2511 (11.17)	5.69 (9.15)	1998	8.21	0.528 (0.321)	13.26 (2.63)	179 (82)	48 (9)	28.95 (98.01)	
					6th (IV) Gear					
37.45 (28.25)	1950 (8.65)	7.35 (11.83)	2001	6.09	0.535 (0.326)	13.32 (2.64)	180 (82)	52 (11)	28.95 (98.01)	

TIRES AND WEIGHT — Tested Without Ballast

Rear Tires—No.	size	psi (kPa)
Front Tires—No.	size	psi (kPa)
Weight of Drawbar		
Static Weight with Operator	front	
	rear	
	Total	

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump was maintained at 110° F (60° C). The performance figures on this summary were taken from a test conducted under the OECD Code II truncated standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1044**, Summary 092, July 15, 1991.

LOUIS E. LEVITICUS
Engineer-in-Charge

R. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)	2600 (179)
Location	remote outlet
Hydraulic oil temperature °F(°C)	105 (76)
Location	rear axle sump
Category	1
Quick attach	none

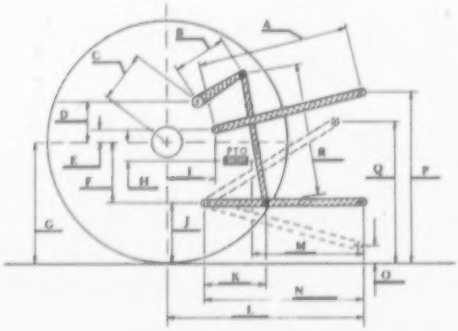
Hitch point distance to ground level in. (mm)	8.3 (211)	13.8 (350)	17.7 (450)	22.1 (560)	25.2 (640)	32.1 (815)
Lift force on frame lb (kN)	3271 (14.5)	3509 (16.0)	3372 (16.0)	3191 (14.9)	3026 (16.1)	3178 (15.1)

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

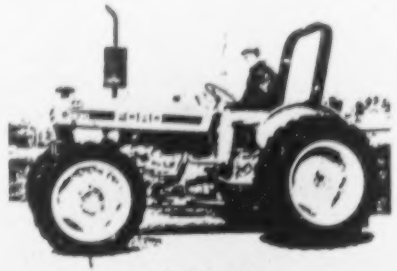
CATEGORY 1
Quick Attach: none

Maximum force Exerted Through Whole Range	3050 lbs (13.6 kN)
a) Opening pressure of relief valve	NA
Sustained pressure of the open relief valve	2600 psi (183 bar)
e) Pump delivery rate at maximum pressure	7.9 GPM (29.9 l/min)
m) Pump delivers rate at maximum hydraulic power	6.8 GPM (25.7 l/min)
Delivery pressure	2250 psi (155 bar)
Power	8.9 HP (6.7 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.3	719
B	10.0	254
C	12.9	327
D	10.1	257
E	7.5	191
F	8.0	203
G	24.0	610
H	4.7	120
I	8.7	222
J	16.0	407
K	18.9	481
L	36.7	933
M	20.9	530
N	34.0	864
O	8.0	203
P	34.1	867
Q	33.1	841
R	29.1	740



Ford 3930 8 x 2 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1645—SUMMARY 083
FORD 4630 8 x 2 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Gal/hr (L/h)	Btu/hp hr (kg/kW h)	Hp hr/gal (kW h/L)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—666 rpm)					
55.41 (41.32)	2200	3.66 (13.87)	0.462 (0.281)	15.12 (2.98)	
Standard PTO Speed (PTO—540 RPM)					
50.77 (37.86)	1800	3.23 (12.22)	0.445 (0.270)	15.73 (3.10)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
55.41 (41.32)	2200	3.66 (13.87)	0.462 (0.281)	15.12 (2.98)	75°F (24°C)
48.59 (36.23)	2274	3.47 (13.02)	0.457 (0.278)	15.31 (3.02)	Relative humidity
37.00 (27.59)	2392	2.53 (9.58)	0.478 (0.291)	14.67 (2.88)	37%
24.81 (18.50)	2529	1.93 (7.31)	0.564 (0.343)	12.85 (2.53)	Barometer
12.47 (9.30)	2311	1.12 (4.24)	0.791 (0.481)	8.81 (1.74)	28.81" Hg (97.66 kPa)
0.27 (0.20)	2364	0.91 (3.45)	24.111 (14.648)	0.29 (0.06)	

Maximum Torque 156 ft lb (212 Nm) at 1400 rpm
Maximum Torque Rise 18.2%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/L)	Temp °F (°C) cool eng mod	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Power—6th (2H) Gear									
46.47 (34.66)	2847 (12.66)	6.12 (9.85)	2198	6.56	0.554 (0.337)	12.63 (2.49)	186 (85)	64 (18)	28.98 (98.11)
75% of Pull at Maximum Power—6th (2H) Gear									
37.21 (27.75)	2134 (9.49)	6.54 (10.52)	2303	4.71	0.558 (0.339)	12.51 (2.47)	184 (84)	66 (19)	28.95 (98.01)
50% of Pull at Maximum Power—6th (2H) Gear									
25.48 (19.00)	1423 (6.33)	6.71 (10.80)	2326	3.16	0.630 (0.383)	11.09 (2.19)	181 (83)	66 (19)	28.95 (98.01)
75% of Pull at Reduced Engine Speed—7th (3H) Gear									
Available gear ratios did not permit running this test									
50% of Pull at Reduced Engine Speed—7th (3H) Gear									
25.58 (19.07)	1429 (6.35)	6.71 (10.81)	1325	5.23	0.595 (0.361)	14.15 (2.79)	181 (83)	66 (19)	28.95 (98.01)

Location of Test: Tractor Testing Laboratories, University of Nebraska, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: April 30-May 3, 1991

Manufacturer: FORD NEW HOLLAND, 500 Diller Avenue, New Holland PA 17557

FUEL, OIL and TIME: **Fuel** No. 2 Diesel **Cetane No.** 53.9 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8399 **Fuel weight** 6.993 lbs/gal *(0.838 kg/L)* **Oil SAE** 15W-40 **API service classification** SG/CE **To motor** 1.152 gal *(4.364 l)* **Drained from motor** 1.083 gal *(4.099 l)* **Transmission and final drive lubricant** Ford M2C 134-D fluid **Front axle lubricant** Ford M2C 134-D fluid **Total time engine was operated** 153.0 hours.

ENGINE: **Make** Ford Diesel **Type** three cylinder vertical **Serial No.** *"U2955790"* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.4" x 4.4" *(111.8 mm x 111.8 mm)* **Compression ratio** 16.5 to 1 **Displacement** 201 cu in *(1294 cd)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, cabtron for power steering fluid **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: **Fuel rate:** 24.0-27.5 lb/hr *(10.9-12.5 kg/hr)* **High idle:** 2530-2380 rpm

CHASSIS: **Type** front wheel assist **Serial No.** *"BL76T11"* **Tread width** rear 59.06" *(1515 mm)* to 79.92" *(2026 mm)* front 55.0" *(1396 mm)* to 73.0" *(1855 mm)* **Wheel base** 81.1" *(2136 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph** *(km/h)* first 1.45 *(2.33)* second 1.80 *(2.90)* third 3.17 *(5.10)* fourth 4.31 *(6.94)* fifth 5.16 *(8.31)* sixth 6.44 *(10.37)* seventh 11.31 *(18.20)* eighth 15.40 *(24.78)* reverse 2.08 *(3.34)*, 7.43 *(11.95)* **Clutch** single dry disc operated by foot pedal **Brakes** wet multiple disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1800 engine rpm **Unladen tractor mass** 5562 lb *(2521 kg)*

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/L)	Temp °F (°C) cool eng mod	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
3rd (1L) Gear									
36.66 (27.34)	4833 (21.50)	2.84 (4.58)	2270	14.67	0.589 (0.358)	11.88 (2.54)	182 (83)	60 (16)	29.00 (98.21)
4th (1L) Gear									
44.54 (33.19)	4335 (19.28)	3.85 (6.20)	2198	12.06	0.576 (0.350)	12.15 (2.58)	186 (86)	63 (17)	28.99 (98.17)
5th (1H) Gear									
46.04 (34.34)	3623 (16.12)	4.77 (7.67)	2199	9.23	0.556 (0.338)	12.58 (2.68)	186 (86)	63 (17)	29.00 (98.21)
6th (2H) Gear									
46.47 (34.66)	2847 (12.66)	6.12 (9.85)	2198	6.56	0.554 (0.337)	12.63 (2.69)	186 (85)	64 (18)	28.98 (98.14)

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/L)	Temp °F (°C) cool eng mod	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Power—6th (2H) Gear									
45.02 (33.58)	2945 (13.10)	5.73 (9.21)	2199	11.70	0.567 (0.345)	12.34 (2.65)	186 (85)	65 (18)	28.97 (98.10)
75% of Pull at Maximum Power—6th (2H) Gear									
36.05 (27.56)	2712 (9.85)	6.26 (10.08)	2295	7.53	0.552 (0.336)	12.56 (2.71)	184 (84)	66 (19)	28.94 (98.00)
50% of Pull at Maximum Power—6th (2H) Gear									
25.54 (19.05)	1475 (6.55)	6.50 (10.47)	2317	4.96	0.617 (0.376)	11.35 (2.23)	180 (82)	66 (19)	28.94 (98.00)
75% of Pull at Reduced Engine Speed—7th (3H) Gear									
Available gear ratios did not permit running this test									
50% of Pull at Reduced Engine Speed—7th (3H) Gear									
25.60 (19.09)	1475 (6.55)	6.52 (10.49)	1321	4.90	0.607 (0.369)	11.57 (2.83)	181 (83)	66 (19)	28.94 (98.00)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/L)	Temp °F (°C) cool eng mod	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
5th (1H) Gear									
41.01 (30.58)	5551 (24.83)	4.62 (7.43)	2295	14.94	0.579 (0.352)	12.08 (2.58)	185 (85)	62 (17)	29.08 (98.24)
6th (2H) Gear									
45.02 (33.58)	2945 (13.10)	5.73 (9.21)	2199	11.70	0.567 (0.345)	12.34 (2.65)	186 (85)	65 (18)	28.97 (98.10)

TIRES AND WEIGHT

	Tested Without Ballast
Rear Tires—No. size lbs & psi (kPa)	Two 18.9-28 R-1 (18-695)
Front Tires—No. size lbs & psi (kPa)	Two 8.3-24 R-1 (210)
Height of Drawbar	16.7 in (420 mm)
Static Weight with Operator—Rear	4042 lb (1834 kg)
—Front	2276 lb (1032 kg)
—Total	6728 lb (2599 kg)

REPAIRS AND ADJUSTMENTS: A fuel injector sealing washer was replaced following the PTO tests.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump was maintained at 147° F (64° C). The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1645**, Summary 083, July 15, 1991.

LOUIS I. LEVEILLEUX
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (SAE Static Test)

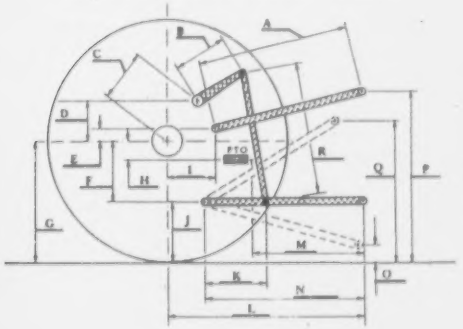
Observed Maximum Pressure psi (bar)				2940 (179)		
Location				remote outlet		
Hydraulic oil temperature °F(°C)				160 (76)		
Location				rear axle sump		
Category				I		
Quick attach				none		
Hitch point distance to ground level in. (mm)	8.5 (211)	13.0 (330)	17.7 (450)	22.1 (560)	27.2 (691)	32.1 (815)
Lift force on frame lb * * * * * * * (kN)	9271 (41.5)	9509 (42.3)	9772 (43.5)	9791 (43.6)	9676 (43.1)	9375 (41.7)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

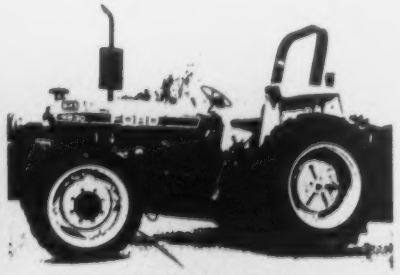
CATEGORY I
Quick Attach none
Maximum Force Exerted Through Whole Range 9016 lbs (11.6 kN)

i) Opening pressure of relief valve	N/A	
Sustained pressure of the open relief valve	2610 psi	(182 bar)
ii) Pump delivery rate at minimum pressure	8.8 GPM	(33.3 l/min)
iii) Pump delivery rate at maximum hydraulic power	7.7 GPM	(29.1 l/min)
Delivery pressure	2590 psi	(165 bar)
Power	10.7 HP	(8.0 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.5	719
B	10.0	254
C	12.9	327
D	10.1	257
E	7.5	191
F	8.0	203
G	25.2	640
H	4.7	120
I	8.7	222
J	17.2	437
K	18.9	481
L	36.7	931
M	20.9	530
N	34.0	864
O	9.2	233
P	35.3	897
Q	34.3	871
R	29.1	740



Ford 4630 8 × 2 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1646—SUMMARY 084
FORD 8630 POWERSHIFT DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gallon (l/h)	Belgo hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
Maximum Power and Fuel Consumption					
Rated Engine Speed—(PTO speed—1147 rpm)					
121.77 (90.80)	2199	7.74 (29.30)	0.414 (0.372)	15.75 (3.46)	
Standard PTO Speed (PTO—1000 RPM):					
117.10 (87.32)	1910	7.00 (26.49)	0.418 (0.251)	16.75 (3.68)	Air temperature
Varying Power and Fuel Consumption					
121.77 (90.80)	2199	7.74 (29.30)	0.414 (0.248)	15.75 (3.46)	74°F (23°C)
111.68 (83.28)	2375	7.64 (28.93)	0.438 (0.263)	14.62 (3.22)	Relative humidity
84.69 (63.18)	2402	6.48 (24.52)	0.535 (0.321)	13.07 (2.88)	69%
57.10 (42.58)	2425	5.25 (19.87)	0.643 (0.386)	10.91 (2.40)	Barometer
28.56 (21.29)	2457	3.00 (11.36)	0.956 (0.573)	7.31 (1.61)	28.75 in Hg (97.29 kPa)
0.00 (0.00)	2655	2.70 (10.23)	58.744 (21.963)	0.18 (0.04)	

Maximum Torque 348 lb ft (471 Nm) at 1501 rpm
Maximum Torque Rise 19.5%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)		Temp °F (°C) cool mg anol	Air dry (mBr)	Baromet inch Hg (kPa)
Maximum Power—10th Gear									
164.06 (77.55)	7005 (15.45)	4.95 (7.96)	2198	5.24	0.516 (0.314)	15.55 (2.63)	190 (88)	75 (23)	28.75 (97.36)
75% of Pull at Maximum Power—10th Gear									
86.80 (64.68)	5028 (26.37)	5.43 (8.74)	2395	2.34	0.587 (0.357)	11.91 (2.15)	195 (90)	76 (24)	28.74 (97.32)
50% of Pull at Maximum Power—10th Gear									
58.67 (43.60)	3367 (17.69)	5.54 (8.92)	2427	1.57	0.710 (0.432)	9.85 (1.91)	195 (90)	76 (24)	28.74 (97.32)
75% of Pull at Reduced Engine Speed—11th Gear									
85.71 (63.92)	5027 (26.38)	5.42 (8.73)	2021	2.31	0.546 (0.332)	13.36 (2.67)	186 (85)	76 (24)	28.74 (97.32)
50% of Pull at Reduced Engine Speed—11th Gear									
58.59 (43.54)	3363 (17.59)	5.54 (8.91)	2051	1.57	0.594 (0.362)	11.77 (2.32)	185 (85)	76 (24)	28.74 (97.32)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: May 14-21, 1991

Manufacturer: FORD NEW HOLLAND, 500 Diller Avenue, New Holland, PA 17557

FUEL OIL and TIME: **Fuel** No. 2 Diesel **Cetane No.** 55.9 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8599 **Fuel weight** 6.995 lbs/gal (0.838 kg/l) **Oil SAE** 15W-40 **API service classification** SG/CF **To motor** 4.018 gal (15.210 l) **Drained from motor** 3.755 gal (14.213 l) **Transmission and final drive lubricant** Ford M2C 134D fluid **Hydraulic lubricant** Ford M2C 134D fluid **Front axle lubricant** Ford M2C 134D fluid **Total time engine was operated** 69.5 hours.

ENGINE: **Make** Ford Diesel **Type** an cylinder vertical with turbocharger **Serial No.** *U2952987* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.4" × 4" (111.8 mm × 111.8 mm) **Compression ratio** 15.6 to 1 **Displacement** 401 cu in (6572 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** two thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: **Fuel rate** 52.2-57.6 lb/hr (23.7-26.1 kg/hr) **High idle** 2425-2475 rpm **Turbo boost** nominal 15-19 psi (103-131 kPa) as measured 15.4 psi (106 kPa)

CHASSIS: **Type** front wheel assist **Serial No.** *AU98001* **Tread width** rear 64.0" (1625 mm) to 120.0" (3048 mm) front 50.8" (1520 mm) to 84.0" (2134 mm) **Wheel base** 105.0" (2667 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.20 (1.94) second 1.65 (2.70) third 1.67 (2.69) fourth 1.91 (3.08) fifth 2.26 (3.64) sixth 2.65 (4.26) seventh 3.11 (5.01) eighth 3.68 (5.92) ninth 4.31 (6.93) tenth 5.01 (8.07) eleventh 5.92 (9.53) twelfth 6.93 (11.16) thirteenth 7.94 (12.78) fourteenth 9.38 (15.10) fifteenth 10.98 (17.67) sixteenth 12.92 (20.80) seventeenth 15.28 (24.59) eighteenth 17.88 (28.77) reverse 1.93 (3.11), 2.28 (3.67), 2.67 (4.30), 3.06 (4.92), 3.62 (5.82), 4.23 (6.81), 4.98 (8.02), 5.88 (9.47), 6.89 (11.09) **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1875 engine rpm and 1000 rpm at 1919

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) cool avg	Air dry (wet)	Barom inch Hg (kPa)
				5th Gear					
28.37 (58.44)	15794 (61.36)	2.13 (3.43)	2403	14.83	0.1659 (0.101)	10.61 (2.09)	184 (84)	70 (21)	28.74 (97.29)
				6th Gear					
91.12 (67.95)	12866 (57.23)	2.66 (4.27)	2378	8.68	0.1591 (0.161)	11.68 (2.30)	186 (86)	72 (22)	28.74 (97.32)
				7th Gear					
98.77 (73.65)	12149 (54.04)	3.05 (4.91)	2275	6.92	0.1552 (0.158)	12.06 (2.38)	187 (86)	72 (22)	28.75 (97.36)
				8th Gear					
100.54 (74.82)	10971 (47.02)	3.56 (5.73)	2200	5.02	0.1586 (0.126)	13.05 (2.57)	189 (87)	72 (22)	28.75 (97.36)
				9th Gear					
100.59 (75.01)	10118 (79.80)	3.72 (6.78)	2201	3.85	0.1531 (0.127)	13.47 (2.66)	191 (88)	72 (22)	28.75 (97.36)
				10th Gear					
104.08 (77.55)	7935 (35.15)	4.93 (7.94)	2198	3.21	0.1516 (0.114)	13.55 (2.67)	190 (88)	73 (23)	28.75 (97.36)
				11th Gear					
102.05 (76.75)	6562 (29.19)	5.88 (9.47)	2201	2.48	0.1519 (0.116)	13.47 (2.65)	190 (88)	74 (23)	28.74 (97.32)
				12th Gear					
101.27 (75.52)	5497 (24.45)	6.91 (11.12)	2199	2.15	0.1526 (0.120)	13.30 (2.62)	189 (87)	75 (24)	28.74 (97.32)
				13th Gear					
99.51 (74.21)	4704 (20.92)	7.93 (12.75)	2198	1.82	0.1539 (0.120)	12.98 (2.56)	190 (88)	75 (24)	28.74 (97.32)
				14th Gear					
97.15 (72.45)	3808 (17.21)	9.12 (15.16)	2202	1.68	0.1543 (0.130)	12.89 (2.54)	190 (88)	76 (24)	28.74 (97.32)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS
(Ballasted Tractor)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) cool avg	Air dry (wet)	Barom inch Hg (kPa)
				4th Gear					
84.23 (62.81)	17444 (77.59)	1.81 (2.91)	2383	14.29	0.1636 (0.282)	11.00 (2.17)	186 (86)	67 (19)	28.76 (97.39)
				5th Gear					
96.73 (72.15)	15086 (67.12)	2.28 (3.67)	2353	7.23	0.1574 (0.138)	12.21 (2.41)	186 (86)	70 (21)	28.74 (97.32)
				6th Gear					
100.27 (74.77)	14051 (62.51)	2.54 (4.08)	2199	6.18	0.1535 (0.126)	13.06 (2.57)	186 (86)	71 (22)	28.74 (97.32)
				7th Gear					
102.58 (76.54)	12705 (56.51)	3.02 (4.86)	2200	5.03	0.1525 (0.119)	13.32 (2.62)	188 (87)	73 (23)	28.75 (97.36)
				8th Gear					
101.21 (75.48)	10480 (46.62)	3.62 (5.83)	2201	3.69	0.1533 (0.121)	13.15 (2.59)	188 (87)	74 (23)	28.75 (97.36)
				9th Gear					
101.76 (75.89)	8953 (39.82)	4.26 (6.86)	2201	3.01	0.1526 (0.120)	13.29 (2.62)	192 (89)	76 (24)	28.75 (97.36)
				10th Gear					
104.45 (77.87)	7995 (35.56)	4.98 (8.01)	2197	2.63	0.1546 (0.122)	13.55 (2.67)	191 (88)	77 (25)	28.75 (97.36)
				11th Gear					
105.67 (77.70)	6572 (29.23)	5.92 (9.52)	2198	2.22	0.1515 (0.119)	13.57 (2.67)	191 (88)	77 (25)	28.75 (97.36)
				12th Gear					
101.21 (75.47)	5454 (24.26)	6.96 (11.20)	2202	1.98	0.1534 (0.120)	13.10 (2.58)	191 (88)	78 (26)	28.75 (97.36)
				13th Gear					
98.96 (73.79)	4646 (20.66)	7.95 (12.86)	2201	1.64	0.1537 (0.120)	13.02 (2.57)	191 (88)	78 (26)	28.76 (97.39)
				14th Gear					
96.45 (71.92)	3824 (17.01)	9.06 (15.72)	2201	1.51	0.1554 (0.122)	12.62 (2.49)	191 (88)	79 (26)	28.76 (97.39)

engine rpm **Unladen tractor mass** 15990 lb (6748 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 198° F (92° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1646**, Summary 0841, August 20, 1991.

LOUIS L. LEVIEUX
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) cool avg	Air dry (wet)	Barom inch Hg (kPa)
				Maximum Power—10th Gear					
104.14 (77.66)	7887 (35.08)	4.95 (7.97)	2203	3.08	0.1517 (0.113)	13.52 (2.66)	191 (88)	77 (25)	28.75 (97.36)
				75% of Pull at Maximum Power—10th Gear					
85.02 (63.85)	5913 (26.30)	5.43 (8.74)	2395	2.43	0.1503 (0.161)	13.79 (2.72)	189 (87)	80 (27)	28.74 (97.32)
				50% of Pull at Maximum Power—10th Gear					
58.28 (43.46)	3944 (17.54)	5.54 (8.92)	2426	1.69	0.1720 (0.136)	12.14 (2.39)	185 (85)	80 (27)	28.74 (97.32)
				75% of Pull at Reduced Engine Speed—11th Gear					
85.76 (63.95)	5915 (26.30)	5.44 (8.75)	2029	2.26	0.1521 (0.117)	13.45 (2.65)	187 (86)	80 (27)	28.74 (97.32)
				50% of Pull at Reduced Engine Speed—11th Gear					
58.20 (43.40)	3938 (17.51)	5.54 (8.92)	2053	1.52	0.1691 (0.166)	11.63 (2.29)	185 (85)	80 (27)	28.74 (97.32)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

				6th Gear					
99.41 (74.12)	15824 (70.39)	2.45 (3.95)	2320	15.78	0.1612 (0.132)	11.43 (2.25)	186 (86)	71 (22)	28.74 (97.32)
				7th Gear					
98.88 (73.68)	12789 (56.89)	2.93 (4.71)	2198	7.62	0.1537 (0.127)	13.02 (2.56)	188 (87)	74 (23)	28.74 (97.32)
				8th Gear					
100.54 (74.97)	10562 (46.98)	3.57 (5.74)	2200	4.75	0.1536 (0.126)	13.04 (2.57)	191 (88)	75 (24)	28.75 (97.36)
				9th Gear					
101.39 (75.61)	9066 (40.06)	4.22 (6.79)	2201	3.72	0.1528 (0.125)	13.25 (2.61)	191 (88)	76 (24)	28.75 (97.36)
				10th Gear					
104.14 (77.66)	7887 (35.08)	4.95 (7.97)	2203	3.08	0.1517 (0.113)	13.52 (2.66)	191 (88)	77 (25)	28.75 (97.36)
				11th Gear					
102.87 (76.71)	6555 (29.15)	5.89 (9.47)	2202	2.67	0.1523 (0.114)	13.38 (2.63)	190 (88)	77 (25)	28.75 (97.36)
				12th Gear					
100.79 (75.16)	5462 (24.30)	6.92 (11.14)	2203	2.10	0.1523 (0.122)	13.21 (2.60)	192 (89)	78 (26)	28.75 (97.36)
				13th Gear					
99.70 (74.34)	4705 (20.93)	7.95 (12.79)	2202	1.85	0.1539 (0.125)	12.98 (2.56)	191 (88)	79 (26)	28.76 (97.39)
				14th Gear					
97.50 (72.71)	3884 (17.28)	9.11 (14.15)	2202	1.60	0.1551 (0.125)	12.70 (2.50)	192 (89)	79 (26)	28.76 (97.39)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Sound Level	79 ft	82 ft
Bystander	—	—

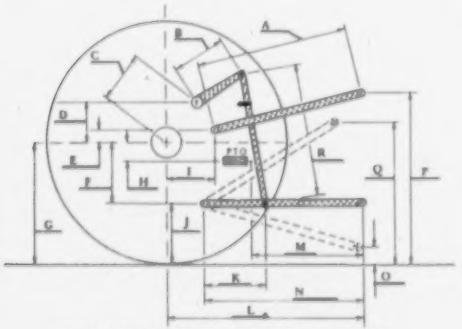
TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi (kPa)	Two 18.4R38, *, 11 (95)	Two 18.4R38, *, 11 (95)
Ballast—Heads inside	1710 lb (776 kg)	None
—Cast iron inside	None	None
Front Tires—No., size, ply & psi (kPa)	Two 14.9R28, R, 16 (110)	Two 14.9R28, R, 16 (95)
Ballast—Liquid inside	None	None
—Cast iron inside	1093 lb (496 kg)	None
Height of Drawbar	19.5 in (495 mm)	18.0 in (455 mm)
Static Weight with Operator—Rear	11454 lb (5059 kg)	9111 lb (4284 kg)
—Front	5861 lb (2611 kg)	4712 lb (2137 kg)
—Total	16950 lb (7692 kg)	14156 lb (6421 kg)

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)				2020 (181)	
Location				remote lift circuit	
Hydraulic oil temperature °F(°C)				158 (59)	
Location				hydraulic sump	
Category				II	
Quick attach				none	
Hitch point distance to ground level in (mm)	8.1 (206)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb (kN)	8010 (35.6)	8168 (36.3)	8268 (36.8)	8077 (35.9)	8000 (35.6)
with lift assist cylinders					
Hitch point distance to ground level in (mm)	8.5 (211)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb (kN)	13158 (58.5)	12414 (55.2)	11961 (53.2)	11097 (49.4)	10286 (45.8)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY II		
Quick Attach: none		
Maximum Force Exerted Through Whole Range	9305 lbs (28.0 kN)	*8908 lb (40.0 kN)
i) Opening pressure of relief valve	NA	
Sustained pressure at compensator cutoff	2570 psi (177 bar)	
ii) Pump delivery rate at minimum pressure and rated engine speed	28.5 GPM (107.1 l/min)	
iii) Pump delivery rate at maximum hydraulic power	24.9 GPM (94.3 l/min)	
Delivery pressure	2150 psi (148 bar)	
Power	31.2 HP (23.3 kW)	*with lift assist cylinders



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.8	756
B	15.6	397
C	16.2	412
D	15.5	394
E	5.0	127
F	10.5	267
G	32.3	820
H	2.4	62
I	17.4	442
J	21.8	553
K	22.6	573
L	45.3	1150
M	23.6	599
N	36.2	921
O	7.7	196
P	45.8	1164
Q	32.2	818
R	34.9	886

Ford 8630 Powershift Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1647—SUMMARY 085
FORD 8730 POWERSHIFT DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel/hr l/hr (lb)	Fuel/hp-hr l/kW-hr (lb/hp-hr)	Hp-hr/gal (kW-hr/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1540 rpm)					
140.76 (104.97)	2199	9.05 (51.25)	0.449 (0.273)	15.56 (3.07)	
Standard PTO Speed (PTO—1000 RPM)					
133.06 (99.22)	1917	8.05 (46.09)	0.423 (0.257)	16.52 (3.25)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					74°F (23°C)
140.76 (104.97)	2199	9.05 (51.25)	0.449 (0.273)	15.56 (3.07)	
127.51 (95.04)	2338	8.71 (52.97)	0.478 (0.291)	14.62 (2.88)	Relative humidity
96.88 (72.24)	2374	7.25 (37.44)	0.525 (0.318)	13.36 (2.63)	69%
65.06 (48.51)	2399	5.79 (21.92)	0.625 (0.379)	11.23 (2.21)	Barometer
33.12 (24.69)	2424	4.12 (15.59)	0.870 (0.529)	8.04 (1.58)	28.61" Hg (96.87 kPa)
0.49 (0.36)	2452	2.83 (10.72)	10.653 (24.728)	0.17 (0.03)	

Maximum Torque 387 lb. ft (525 Nm) at 1649 rpm
Maximum Torque Rise 15.2%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-hr)	Hp-hr/gal (kW-hr/l)	Temp °F (°C) cool. air eng. oil	Temp °F (°C) cool. air duct bulb	Barom inch Hg (kPa)
Maximum Power—11th Gear									
123.57 (92.14)	7441 (33.10)	6.23 (10.02)	2109	2.62	0.503 (0.306)	13.90 (2.74)	186 (85)	53 (12)	28.99 (98.17)
75% of Pull at Maximum Power—11th Gear									
93.02 (69.39)	5585 (24.85)	6.69 (10.77)	2344	2.01	0.567 (0.345)	12.32 (2.43)	185 (85)	63 (17)	28.94 (97.99)
50% of Pull at Maximum Power—11th Gear									
67.78 (50.54)	5721 (25.45)	6.85 (10.99)	2389	1.30	0.670 (0.408)	10.43 (2.06)	184 (84)	63 (17)	28.91 (97.89)
75% of Pull at Reduced Engine Speed—12th Gear									
69.75 (74.38)	5581 (24.82)	6.70 (10.78)	2095	1.74	0.560 (0.341)	13.98 (2.75)	186 (86)	65 (18)	28.94 (98.00)
50% of Pull at Reduced Engine Speed—12th Gear									
67.83 (50.58)	5722 (25.45)	6.84 (11.00)	2054	1.50	0.575 (0.350)	12.17 (2.40)	184 (84)	65 (18)	28.94 (98.00)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: May 2-15, 1991

Manufacturer: FORD NEW HOLLAND, 500 Diller Avenue, New Holland, PA 17557

FUEL, OIL and TIME: Fuel No. 2 Diesel **Cetane** No. 53.9 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8305 **Fuel weight** 6.9193 lbs/gal (0.828 kg/l) **Oil SAE** 15W-40 **API service classification** SG/CE **To motor** 4.384 gal (16.594 l) **Drained from motor** 4.145 gal (15.691 l) **Transmission and final drive lubricant** Ford M2C 134D fluid **Hydraulic lubricant** Ford M2C 134D fluid **Front axle lubricant** Ford M2C 134D fluid **Total time engine was operated** 27.0 hours.

ENGINE: Make Ford Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *H2940048* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.4" × 4.4" (111.8 mm × 111.8 mm) **Compression ratio** 15.6 to 1 **Displacement** 401 cu in (6572 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** two thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 61.7-68.3 lb/hr (28.0-31.0 kg/hr) **High idle** 2425-2475 rpm **Turbo boost** nominal 16-20 psi (110-138 kPa) as measured 19.5 psi (135 kPa)

CHASSIS: Type front wheel assist **Serial No.** *A702800* **Tread width** rear 64.0" (1625 mm) to 120.0" (3048 mm) front 59.8" (1520 mm) to 84.0" (2134 mm) **Wheel base** 110.8" (2814 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed rates with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.28 (2.06) second 1.54 (2.44) third 1.77 (2.85) fourth 2.05 (3.27) fifth 2.40 (3.86) sixth 2.81 (4.52) seventh 3.30 (5.32) eighth 3.90 (6.28) ninth 4.57 (7.35) tenth 5.32 (8.56) eleventh 6.28 (10.11) twelfth 7.35 (11.84) thirteenth 8.62 (13.86) fourteenth 9.96 (16.02) fifteenth 11.65 (18.75) sixteenth 13.71 (22.07) seventeenth 16.21 (26.09) eighteenth 18.97 (30.53) reverse 2.05 (3.30), 2.42 (3.90), 2.83 (4.56), 3.25 (5.22), 3.84 (6.17), 4.49 (7.21), 5.28 (8.50), 6.25 (10.05), 7.31 (11.76) **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off 540 rpm at 1875 engine rpm and 1000 rpm at 1919**

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lb (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch Hg (kPa)
10th Gear									
108.28 (77.76)	15411 (68.56)	2.53 (4.08)	2501	15.00	0.608 (0.37)	11.30 (27.1)	185 (85)	50 (10)	29.00 (98.21)
7th Gear									
116.54 (86.90)	14179 (63.07)	3.08 (4.96)	2214	8.77	0.581 (0.356)	12.91 (31.0)	186 (85)	52 (11)	29.00 (98.21)
9th Gear									
119.95 (89.45)	11899 (52.93)	3.76 (6.04)	2202	3.08	0.525 (0.321)	13.38 (32.1)	185 (85)	53 (12)	28.98 (98.14)
7th Gear									
119.59 (89.18)	10017 (44.56)	4.18 (7.21)	2201	3.74	0.520 (0.318)	13.45 (32.3)	187 (86)	54 (12)	28.98 (98.14)
10th Gear									
122.55 (91.39)	8761 (38.96)	5.25 (8.45)	2201	2.90	0.508 (0.311)	13.70 (32.9)	187 (86)	55 (13)	28.98 (98.14)
11th Gear									
123.57 (92.15)	7441 (33.10)	6.23 (10.02)	2199	2.62	0.503 (0.308)	13.80 (33.1)	186 (85)	54 (12)	28.99 (98.17)
12th Gear									
120.79 (90.06)	6170 (27.45)	7.44 (11.97)	2205	2.18	0.512 (0.313)	13.53 (32.5)	186 (86)	52 (11)	29.00 (98.21)
11th Gear									
119.21 (88.92)	5310 (23.62)	8.42 (13.55)	2201	1.74	0.522 (0.319)	13.30 (32.0)	187 (86)	54 (12)	28.98 (98.14)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS
(Ballasted Tractor)

Power Hp (kW)	Drawbar pull lb (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch Hg (kPa)
8th Gear									
93.08 (69.42)	18486 (82.24)	1.80 (2.90)	2345	11.25	0.624 (0.380)	11.20 (26.8)	186 (85)	51 (10)	28.99 (98.17)
9th Gear									
114.05 (85.05)	16433 (81.06)	2.32 (3.73)	2272	7.91	0.596 (0.363)	12.57 (30.1)	186 (86)	50 (10)	29.00 (98.21)
10th Gear									
118.89 (88.66)	10518 (46.79)	3.70 (5.96)	2201	5.51	0.526 (0.320)	13.25 (31.7)	186 (86)	53 (12)	29.00 (98.21)
7th Gear									
121.74 (90.78)	14223 (63.25)	3.21 (5.17)	2199	4.51	0.513 (0.312)	13.61 (32.6)	187 (86)	51 (11)	28.99 (98.17)
8th Gear									
120.86 (90.13)	11821 (52.58)	3.83 (6.17)	2198	3.45	0.513 (0.312)	13.64 (32.6)	192 (89)	52 (11)	28.98 (98.14)
9th Gear									
120.01 (89.49)	9919 (44.12)	4.54 (7.30)	2202	2.68	0.521 (0.317)	13.42 (32.1)	190 (88)	53 (12)	28.95 (98.04)
10th Gear									
121.54 (90.63)	8597 (38.24)	5.30 (8.53)	2202	2.07	0.546 (0.332)	13.55 (32.4)	191 (88)	68 (20)	28.96 (98.08)
11th Gear									
121.98 (90.96)	7292 (32.44)	6.23 (10.03)	2198	1.81	0.543 (0.330)	13.63 (32.6)	188 (87)	69 (21)	28.95 (98.04)
12th Gear									
119.85 (89.37)	6051 (26.91)	7.36 (11.84)	2200	1.54	0.523 (0.318)	13.96 (33.4)	190 (88)	69 (21)	28.95 (98.04)
13th Gear									
118.61 (88.45)	5253 (23.36)	8.16 (13.13)	2197	1.37	0.527 (0.321)	13.76 (32.9)	191 (88)	70 (21)	28.95 (98.04)

engine rpm **Unladen tractor mass** 15248 lb (6916 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 170° F (80° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test rule procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1647**, Summary 085, August 20, 1991.

LOUIS J. TAVERNIER
Engineer-in-Charge

R. VON BARGEN
R. D. GRISSO
G. J. HOFEMAN
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lb (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch Hg (kPa)
Maximum Power—11th Gear									
121.90 (90.91)	7310 (32.51)	6.25 (10.06)	2202	2.30	0.515 (0.313)	13.59 (32.6)	188 (86)	69 (21)	28.95 (98.04)
75% of Full at Maximum Power—11th Gear									
97.80 (72.93)	5405 (24.04)	6.69 (10.76)	2345	1.78	0.578 (0.345)	12.11 (29.1)	188 (87)	75 (24)	28.94 (98.00)
50% of Full at Maximum Power—11th Gear									
66.74 (49.77)	3620 (16.10)	6.81 (11.01)	2365	1.25	0.605 (0.361)	10.10 (24.2)	185 (85)	75 (24)	28.94 (98.00)
75% of Full at Reduced Engine Speed—12th Gear									
97.72 (72.87)	5392 (23.99)	6.68 (10.76)	2002	1.60	0.569 (0.340)	12.73 (30.5)	188 (87)	75 (24)	28.93 (98.00)
50% of Full at Reduced Engine Speed—12th Gear									
66.89 (49.88)	3652 (16.24)	6.87 (11.06)	2015	1.16	0.586 (0.350)	11.91 (28.5)	184 (85)	75 (24)	28.93 (98.00)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lb (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr per gal (kW-h/l)	Temp °F (°C) coolant	Temp °F (°C) air	Barom inch Hg (kPa)
10th Gear									
105.13 (78.39)	15427 (68.63)	2.56 (4.11)	2201	11.07	0.595 (0.355)	11.65 (27.9)	186 (86)	70 (21)	29.00 (98.21)
7th Gear									
117.08 (87.30)	13217 (58.78)	3.10 (4.99)	2199	7.61	0.579 (0.345)	11.91 (28.5)	188 (87)	71 (22)	28.98 (98.14)
8th Gear									
119.95 (89.45)	11897 (52.92)	3.78 (6.08)	2201	4.76	0.519 (0.310)	13.17 (31.5)	191 (88)	72 (22)	28.98 (98.14)
9th Gear									
120.02 (89.50)	10015 (44.55)	4.43 (7.13)	2201	3.16	0.520 (0.310)	13.15 (31.5)	189 (87)	63 (17)	28.98 (98.14)
10th Gear									
121.61 (90.71)	8688 (38.65)	5.25 (8.45)	2198	2.74	0.547 (0.327)	13.52 (32.4)	190 (88)	68 (20)	28.96 (98.08)
11th Gear									
121.80 (90.83)	7310 (32.51)	6.25 (10.06)	2202	2.30	0.515 (0.313)	13.59 (32.6)	188 (87)	69 (21)	28.95 (98.04)
12th Gear									
119.71 (89.27)	6111 (27.19)	7.34 (11.82)	2201	1.87	0.525 (0.319)	13.33 (31.9)	191 (88)	69 (21)	28.95 (98.04)
13th Gear									
118.93 (88.71)	5282 (23.50)	8.12 (13.07)	2197	1.52	0.532 (0.323)	13.11 (31.4)	192 (89)	71 (22)	28.95 (98.04)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Sound Level	92.0	92.0
Bystander	—	—

TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No. and psi (kPa)	Two 18.4R42 ** 11 (69)	Two 18.4R42 ** 11 (69)
Ballast—Fluids in tires	1600 lb (693 kg)	None
—Cast iron weights	1214 lb (536 kg)	None
Front Tires—No. and psi (kPa)	Two 16.9-28 R 16 (110)	Two 16.9-28 R 16 (110)
Ballast—Liquid in tires	None	None
—Cast iron weights	536 lb (243 kg)	None
Height of Drawbar	21 in. (533 mm)	20 in. (508 mm)
Static Weight with Operator—Rear	11624 lb (5273 kg)	9620 lb (4364 kg)
—Front	6308 lb (2861 kg)	3748 lb (1700 kg)
—Total	17932 lb (8133 kg)	13412 lb (6084 kg)

NEBRASKA OECD TRACTOR TEST 1648—SUMMARY 086
FORD 8830 POWERSHIFT DIESEL
18 SPEED

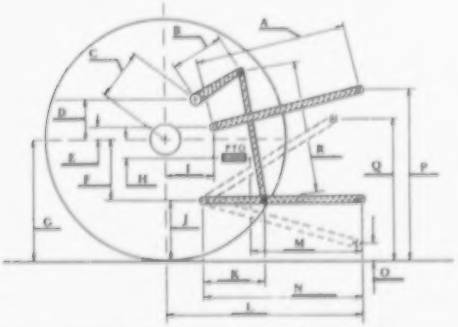
THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)	2620 (181)
Location	remote lift circuit
Hydraulic oil temperature °F(°C)	145 (63)
Location	hydraulic sump
Category	III
Quick attach	none

Hitch point distance to ground level in (mm)	8.0 (203)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb (daN)	8585 (37.1)	8481 (37.7)	8068 (35.9)	6279 (28.0)	3788 (16.8)
with lift assist cylinders					
Hitch point distance to ground level in (mm)	8.2 (208)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb (daN)	12987 (57.8)	12424 (55.3)	11099 (49.4)	11458 (51.0)	10348 (46.0)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY III		
Quick Attach none		
Maximum Force Exerted		
Through Whole Range	6791 lbs (30.2 kN)	7930 lb (41.4 kN)
a) Opening pressure of relief valve	NA	
Sustained pressure with pump stalled	2640 psi (182 bar)	
e) Pump delivers rate at minimum pressure and rated engine speed	29.5 GPM (107.9 l/min)	
m) Pump delivers rate at maximum hydraulic power	25.5 GPM (96.5 l/min)	
Delivery pressure	2250 psi (155 bar)	
Power	33.5 HP (25.0 kW)	*with lift assist cylinders



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.0	737
B	15.0	381
C	16.2	413
D	15.5	394
E	8.0	203
F	10.5	267
G	34.2	870
H	2.5	62
I	17.1	442
J	23.7	603
K	27.2	564
L	44.7	1135
M	23.0	584
N	35.7	906
O	9.6	244
P	50.2	1288
Q	34.1	866
R	34.9	886

Ford 8730 Powershift Diesel

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp/hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
Rated Engine Speed—(PTO speed—1147 rpm)					
171.04 (127.54)	2198	10.56 (79.96)	0.432 (0.263)	16.19 (4.28)	
Standard PTO Speed (PTO—1000 RPM)					
166.48 (124.13)	1918	9.76 (76.95)	0.410 (0.249)	17.06 (4.51)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
171.04 (127.54)	2198	10.56 (79.96)	0.432 (0.263)	16.19 (4.28)	72°F (22°C)
156.89 (117.01)	2599	10.42 (79.06)	0.459 (0.279)	15.24 (4.03)	Relative humidity
119.55 (89.16)	2425	8.54 (72.32)	0.504 (0.306)	13.88 (3.67)	68%
79.42 (59.22)	2455	6.95 (26.31)	0.612 (0.372)	11.43 (3.02)	Barometer
40.86 (30.46)	2443	5.54 (20.97)	0.959 (0.583)	7.29 (1.93)	29.09" Hg (98.50 kPa)
0.49 (0.37)	2469	3.56 (13.48)	50.767 (30.850)	0.14 (0.04)	

Maximum Torque 485 lb ft (655 Nm) at 1600 rpm
Maximum Torque Rise 18.2%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp/hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool ing used	Air (in) (kPa)	Barom etric in Hg (kPa)
Maximum Power—11th Gear									
144.56 (107.80)	8660 (38.50)	6.10 (9.82)	2200	2.91	0.511 (0.311)	13.70 (3.70)	198 (92)	66 (19)	29.08 (98.46)
75% of Pull at Maximum Power—11th Gear									
119.75 (89.29)	6864 (29.64)	6.74 (10.84)	2406	2.23	0.550 (0.334)	12.52 (3.47)	189 (87)	71 (22)	29.04 (98.34)
50% of Pull at Maximum Power—11th Gear									
81.55 (60.80)	4445 (19.75)	6.68 (11.07)	2439	1.54	0.459 (0.280)	10.61 (3.09)	185 (85)	71 (22)	29.04 (98.34)
75% of Pull at Reduced Engine Speed—12th Gear									
119.54 (89.14)	6858 (29.62)	6.73 (10.83)	2055	2.25	0.506 (0.308)	13.83 (3.72)	187 (86)	71 (22)	29.05 (98.34)
50% of Pull at Reduced Engine Speed—12th Gear									
81.60 (60.85)	4445 (19.76)	6.69 (11.08)	2086	1.45	0.470 (0.312)	12.26 (3.41)	184 (84)	71 (22)	29.04 (98.34)

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Darrell Nelson, Dean and Director

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: May 17-22, 1991

Manufacturer: FORD NEW HOLLAND, 500 Hibler Avenue, New Holland, PA 17557

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 53.9 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8391 **Fuel weight** 6.993 lb/gal *(0.838 kg/l)* **Oil SAE** 15W-40 **API service classification** SG/CE **To motor** 4.253 gal *(16.099 l)* **Drained from motor** 4.028 gal *(15.246 l)* **Transmission and final drive lubricant** Ford M2C 134D fluid **Hydraulic lubricant** Ford M2C 134D fluid **Front axle lubricant** Ford M2C 134D fluid **Total time engine was operated** 20.5 hours.

ENGINE: Make Ford Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *M2941449* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.4" × 4.4" *(111.8 mm × 111.8 mm)* **Compression ratio** 15.6 to 1 **Displacement** 401 cu in *(6572 cc)* **Starting system** 12 volt **Lubrication pressure Air cleaner** two paper elements and aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** two thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 71.6-79.2 lb/hr *(32.5-35.9 kg/hr)* **High idle** 2425-2475 rpm **Turbo boost** nominal 15-19 psi *(103-131 kPa)* as measured 18.0 psi *(124 kPa)*

CHASSIS: Type front wheel assist **Serial No.** **A928997** **Tread width** rear 64.0" *(1626 mm)* to 120.0" *(3048 mm)* front 59.8" *(1520 mm)* to 84.0" *(2134 mm)* **Wheel base** 110.8" *(2814 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.26 *(2.03)* second 1.49 *(2.39)* third 1.74 *(2.80)* fourth 1.99 *(3.21)* fifth 2.36 *(3.79)* sixth 2.76 *(4.44)* seventh 3.25 *(5.22)* eighth 3.81 *(6.17)* ninth 4.49 *(7.22)* tenth 5.25 *(8.41)* eleventh 6.18 *(9.94)* twelfth 7.25 *(11.63)* thirteenth 8.28 *(13.32)* fourteenth 9.79 *(15.75)* fifteenth 11.45 *(18.43)* sixteenth 13.48 *(21.69)* seventeenth 15.93 *(25.64)* eighteenth 18.64 *(30.00)* reverse 2.01 *(3.24)*, 2.38 *(3.83)*, 2.79 *(4.48)*, 3.19 *(5.13)*, 3.77 *(6.07)*, 4.41 *(7.10)*, 5.19 *(8.36)*, 6.14 *(9.88)*, 7.18 *(11.56)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 1919 engine rpm **Unladen tractor mass** 15560 lb *(7058 kg)*.

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: May 17-22, 1991

Manufacturer: FORD NEW HOLLAND, 500 Hibler Avenue, New Holland, PA 17557

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 53.9 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8391 **Fuel weight** 6.993 lb/gal *(0.838 kg/l)* **Oil SAE** 15W-40 **API service classification** SG/CE **To motor** 4.253 gal *(16.099 l)* **Drained from motor** 4.028 gal *(15.246 l)* **Transmission and final drive lubricant** Ford M2C 134D fluid **Hydraulic lubricant** Ford M2C 134D fluid **Front axle lubricant** Ford M2C 134D fluid **Total time engine was operated** 20.5 hours.

ENGINE: Make Ford Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** **M2941449** **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.4" × 4.4" *(111.8 mm × 111.8 mm)* **Compression ratio** 15.6 to 1 **Displacement** 401 cu in *(6572 cc)* **Starting system** 12 volt **Lubrication pressure Air cleaner** two paper elements and aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** two thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 71.6-79.2 lb/hr *(32.5-35.9 kg/hr)* **High idle** 2425-2475 rpm **Turbo boost** nominal 15-19 psi *(103-131 kPa)* as measured 18.0 psi *(124 kPa)*

CHASSIS: Type front wheel assist **Serial No.** **A928997** **Tread width** rear 64.0" *(1626 mm)* to 120.0" *(3048 mm)* front 59.8" *(1520 mm)* to 84.0" *(2134 mm)* **Wheel base** 110.8" *(2814 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.26 *(2.03)* second 1.49 *(2.39)* third 1.74 *(2.80)* fourth 1.99 *(3.21)* fifth 2.36 *(3.79)* sixth 2.76 *(4.44)* seventh 3.25 *(5.22)* eighth 3.81 *(6.17)* ninth 4.49 *(7.22)* tenth 5.25 *(8.41)* eleventh 6.18 *(9.94)* twelfth 7.25 *(11.63)* thirteenth 8.28 *(13.32)* fourteenth 9.79 *(15.75)* fifteenth 11.45 *(18.43)* sixteenth 13.48 *(21.69)* seventeenth 15.93 *(25.64)* eighteenth 18.64 *(30.00)* reverse 2.01 *(3.24)*, 2.38 *(3.83)*, 2.79 *(4.48)*, 3.19 *(5.13)*, 3.77 *(6.07)*, 4.41 *(7.10)*, 5.19 *(8.36)*, 6.14 *(9.88)*, 7.18 *(11.56)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 1919 engine rpm **Unladen tractor mass** 15560 lb *(7058 kg)*.

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant eng oil	Air cleaner inlet	Barom inch Hg (kPa)
					7th Gear				
127.51 (95.04)	15451 (68.63)	5.09 (8.19)	2393	13.95	0.603 (0.367)	11.60 (2.28)	186 (85)	64 (18)	29.08 (98.48)
					8th Gear				
138.89 (103.56)	13760 (60.93)	5.80 (9.33)	2291	6.75	0.545 (0.332)	12.83 (2.53)	188 (87)	65 (18)	29.08 (98.48)
					9th Gear				
140.14 (104.50)	12046 (53.58)	6.56 (10.56)	2202	4.82	0.526 (0.320)	13.29 (2.62)	187 (86)	67 (19)	29.07 (98.44)
					10th Gear				
143.33 (106.88)	10483 (46.63)	7.13 (11.47)	2201	3.92	0.514 (0.313)	13.61 (2.68)	188 (87)	67 (19)	29.07 (98.44)
					11th Gear				
144.56 (107.80)	8880 (39.50)	8.10 (13.03)	2201	2.91	0.511 (0.311)	13.70 (2.70)	190 (88)	66 (19)	29.08 (98.48)
					12th Gear				
142.16 (106.01)	7405 (32.95)	9.20 (14.80)	2202	2.57	0.519 (0.316)	13.39 (2.64)	189 (87)	66 (19)	29.08 (98.48)
					13th Gear				
140.27 (104.60)	6352 (28.26)	9.28 (14.93)	2203	2.14	0.524 (0.319)	13.35 (2.63)	189 (87)	66 (19)	29.08 (98.48)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS
(Ballasted Tractor)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant eng oil	Air cleaner inlet	Barom inch Hg (kPa)
					5th Gear				
127.29 (94.92)	21043 (93.60)	2.27 (3.65)	2368	12.40	0.602 (0.366)	11.61 (2.29)	186 (86)	72 (22)	28.86 (97.73)
					6th Gear				
136.71 (101.94)	18172 (80.82)	2.78 (4.47)	2317	6.36	0.555 (0.338)	12.59 (2.48)	188 (87)	73 (23)	28.87 (97.77)
					7th Gear				
139.88 (104.31)	16654 (74.08)	3.15 (5.07)	2298	5.33	0.527 (0.320)	13.28 (2.62)	191 (88)	75 (24)	28.88 (97.80)
					8th Gear				
140.15 (104.51)	15080 (67.09)	3.76 (6.05)	2298	3.91	0.524 (0.319)	13.34 (2.63)	191 (88)	75 (24)	28.88 (97.80)
					9th Gear				
140.17 (104.52)	13851 (61.63)	4.44 (7.15)	2294	3.27	0.524 (0.319)	13.35 (2.63)	192 (89)	75 (24)	28.88 (97.80)
					10th Gear				
144.01 (107.39)	10588 (46.21)	5.29 (8.51)	2293	2.68	0.515 (0.313)	13.64 (2.69)	196 (91)	76 (24)	28.87 (97.77)
					11th Gear				
142.57 (106.16)	8643 (38.44)	6.18 (9.95)	2291	2.34	0.520 (0.316)	13.44 (2.65)	197 (92)	79 (26)	28.86 (97.67)
					12th Gear				
139.22 (103.82)	7187 (31.97)	7.26 (11.69)	2293	1.56	0.529 (0.322)	13.22 (2.60)	192 (89)	81 (27)	28.86 (97.67)
					13th Gear				
136.97 (102.13)	6163 (27.41)	8.33 (13.41)	2292	1.39	0.530 (0.323)	12.96 (2.55)	193 (89)	85 (29)	28.86 (97.67)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 179° F (82° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No **1648**, Summary 1086, August 20, 1991.

LOUIS E. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS
(Front Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp °F (°C) coolant eng oil	Air cleaner inlet	Barom inch Hg (kPa)
			Maximum Power—10th Gear						
143.41 (106.94)	10482 (46.62)	5.13 (8.26)	2202	3.55	0.514 (0.313)	13.61 (2.68)	196 (91)	78 (26)	28.89 (97.83)
			75% of Pull at Maximum Power—10th Gear						
119.25 (88.93)	7868 (35.00)	5.68 (9.15)	2410	2.54	0.505 (0.308)	13.91 (2.73)	190 (88)	82 (28)	28.89 (97.83)
			50% of Pull at Maximum Power—10th Gear						
81.14 (60.51)	5243 (23.32)	5.80 (9.34)	2440	1.60	0.657 (0.400)	10.64 (2.10)	185 (85)	82 (28)	28.89 (97.83)
			75% of Pull at Reduced Engine Speed—11th Gear						
119.10 (88.81)	7868 (35.00)	5.68 (9.14)	2038	2.45	0.508 (0.309)	13.76 (2.71)	187 (86)	82 (28)	28.89 (97.83)
			50% of Pull at Reduced Engine Speed—11th Gear						
81.10 (60.47)	5245 (23.33)	5.80 (9.33)	2063	1.60	0.566 (0.344)	12.35 (2.43)	185 (85)	82 (28)	28.89 (97.83)

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

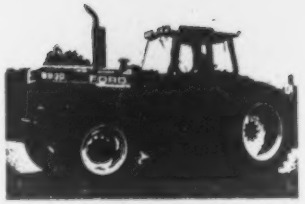
					7th Gear				
128.14 (95.56)	16306 (72.53)	2.95 (4.74)	2256	15.01	0.580 (0.353)	12.05 (2.37)	190 (88)	74 (23)	28.87 (97.77)
					8th Gear				
137.85 (102.79)	15089 (67.13)	3.70 (5.95)	2201	5.54	0.532 (0.324)	13.14 (2.59)	191 (88)	75 (24)	28.88 (97.80)
					9th Gear				
139.52 (104.04)	11057 (51.10)	4.38 (7.05)	2202	4.15	0.526 (0.320)	13.30 (2.62)	195 (91)	74 (23)	28.86 (97.73)
					10th Gear				
143.41 (106.94)	10482 (46.62)	5.13 (8.26)	2202	3.55	0.514 (0.313)	13.61 (2.68)	196 (91)	78 (26)	28.89 (97.83)
					11th Gear				
141.51 (105.52)	8677 (38.59)	6.12 (9.84)	2204	2.71	0.520 (0.316)	13.44 (2.65)	195 (91)	80 (27)	28.90 (97.87)
					12th Gear				
139.02 (103.67)	7261 (32.30)	7.18 (11.55)	2198	2.11	0.529 (0.322)	13.22 (2.60)	195 (91)	82 (28)	28.89 (97.83)
					13th Gear				
137.72 (102.70)	6251 (27.80)	8.26 (13.30)	2200	1.77	0.532 (0.324)	13.14 (2.59)	195 (91)	84 (29)	28.89 (97.83)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Sound Level	79.0	80.0
Bystander		

TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi (kPa)	Four 20.8R38, **, 14 (95)	Two 20.8R38, **, 14 (95)
Ballast—Duals (total)	1900 lb (862 kg)	None
—Cast Iron (total)	1225 lb (556 kg)	None
Front Tires—No., size, ply & psi (kPa)	Four 16.9-28, 8, 16 (110)	Two 16.9-28, 8, 16 (110)
Ballast—Liquid (total)	None	None
—Cast Iron (total)	1450 lb (658 kg)	None
Height of Drawbar	20.5 in (520 mm)	19.0 in (485 mm)
Static Weight with Operator—Rear	13020 lb (5906 kg)	9093 lb (4488 kg)
—Front	7280 lb (3302 kg)	5630 lb (2645 kg)
—Total	20300 lb (9208 kg)	15725 lb (7133 kg)

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)				2920 (181)	
Location				remote lift circuit	
Hydraulic oil temperature °F(°C)				145 (63)	
Location				hydraulic sump	
Category				III	
Quick attach				none	
Hitch point distance to ground level in (mm)	8.0 (203)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb (kN)	8085 (35.9)	8181 (36.4)	8684 (38.6)	8279 (36.8)	7786 (34.6)
with lift assist cylinders					
Hitch point distance to ground level in (mm)	8.2 (208)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb (kN)	12987 (57.8)	12424 (55.3)	11993 (53.3)	11458 (51.0)	10338 (46.0)



Ford 8830 Powershift Diesel

THREE POINT HITCH PERFORMANCE (OECD Static Test)

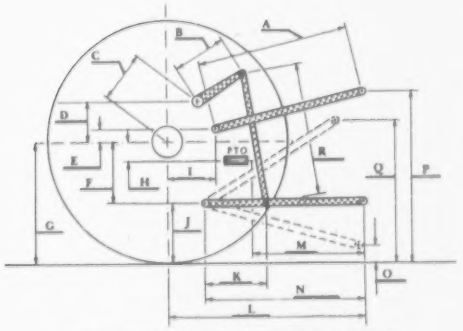
CATEGORY III
Quick Attach: none
Maximum force exerted
Through Whole Range: 6791 lbs (30.2 kN) 9930 lbs (44.4 kN)

i) Opening pressure of relief valve: NA
Sustained pressure with pump stalled: 2640 psi (182 bar)

ii) Pump delivers rate at maximum pressure and rated engine speed: 29.0 GPM (109.8 l/min)

iii) Pump delivers rate at maximum hydraulic power: 25.1 GPM (95.0 l/min)
Delivers pressure: 2150 psi (148 bar)
Power: 51.5 HP (23.5 kW)

*with lift assist cylinders



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.0	737
B	15.0	381
C	16.2	412
D	15.5	394
E	8.0	203
F	10.5	267
G	33.7	859
H	2.4	62
I	17.4	442
J	23.2	588
K	22.2	564
L	44.7	1135
M	23.0	584
N	35.7	906
O	9.1	231
P	50.2	1275
Q	33.6	853
R	34.9	886

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1649—SUMMARY 087
CASE INTERNATIONAL 9230 DIESEL
ALSO STEIGER 9230 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Calc'd (kg/hr)	Brhp hr (kg/kW h)	Hp hr gal (kW h/l)	Mean Atmosphere Condition
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1048 rpm)					
198.65 (148.12)	2199	11.74 (44.46)	0.415 (0.253)	16.92 (3.13)	
Standard PTO Speed (PTO—1000 RPM)					
207.85 (154.98)	2092	11.85 (44.88)	0.399 (0.243)	17.54 (3.45)	
Maximum Power (2 Hours)					
218.20 (162.71)	1900	11.87 (44.95)	0.360 (0.271)	18.30 (3.62)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
198.65 (148.12)	2199	11.74 (44.46)	0.415 (0.253)	16.92 (3.13)	75°F (23°C)
174.25 (129.94)	2252	10.68 (40.44)	0.429 (0.261)	16.31 (3.21)	Relative humidity
151.59 (98.13)	2286	8.75 (33.13)	0.485 (0.283)	15.04 (2.96)	89%
89.44 (66.70)	2520	7.04 (26.65)	0.550 (0.335)	12.71 (2.50)	Barometer
44.28 (33.02)	2550	4.93 (18.66)	0.779 (0.474)	8.98 (1.77)	28.92" Hg (97.92 kPa)
0.58 (0.28)	2575	5.22 (12.18)	50.995 (16.693)	0.12 (0.02)	

Maximum Torque 628 lb ft (852 Nm) at 1900 rpm
Maximum Torque Rise 52.4%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption Hp hr gal (kg/kW hr)		Temp °F (°C) cool eng.	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th Gear									
177.51 (132.37)	14127 (62.84)	4.71 (7.58)	2198	2.72	0.456 (0.279)	15.20 (3.01)	185 (85)	81 (27)	28.85 (97.65)
75% of Pull at Maximum Power—5th Gear									
148.50 (103.28)	10603 (47.16)	4.99 (7.88)	2268	2.14	0.493 (0.300)	14.18 (2.79)	184 (84)	88 (31)	28.81 (97.56)
50% of Pull at Maximum Power—5th Gear									
94.65 (70.63)	7059 (31.40)	5.07 (8.09)	2308	1.51	0.567 (0.345)	12.34 (2.43)	182 (83)	88 (31)	28.81 (97.56)
75% of Pull at Reduced Engine Speed—6th Gear									
138.80 (103.20)	10509 (47.14)	4.98 (7.88)	1842	1.98	0.511 (0.268)	15.50 (3.12)	183 (84)	88 (31)	28.81 (97.56)
50% of Pull at Reduced Engine Speed—6th Gear									
94.91 (70.72)	7060 (31.40)	5.01 (8.06)	1870	1.51	0.482 (0.293)	14.50 (2.86)	181 (83)	88 (31)	28.81 (97.56)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: June 10-14, 1991

Manufacturer: J.I. CASE CO. 5401 First Avenue North, Fargo ND 58102

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane** *(No.* 55.9 **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8599 **Fuel weight** 6.995 lbs/gal *(0.838 kg/l)* **Oil** SAE 15W-40 **API service classification** CC, CD **To motor** 4.545 gal *(16.440 l)* **Drained from motor** 3.886 gal *(14.711 l)* **Transmission and final drive lubricant** Case III Hytran Plus fluid **Hydraulic lubricant** Case III Hytran Plus fluid **Total time engine was operated** 21.0 hours.

ENGINE: **Make** Consolidated Diesel Corporation Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 44577092 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.488" × 5.315" *(114.0 mm × 135.0 mm)* **Comp. cmion ratio** 16.5 to 1 **Displacement** 505 cu in *(8269 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** two thermostats.

ENGINE OPERATING PARAMETERS: Fuel rate 75.6-85.8 lb/hr *(34.7-38.0 kg/hr)* **High idle** 2550-2650 rpm **Turbo boost** nominal 12-15.5 psi *(81-106 kPa)* as measured 15.5 psi *(106 kPa)*.

CHASSIS: Type four wheel drive with duals, articulated **Serial No.** *(C)*0027357. **Tread width** rear 60.0" *(1524 mm)* to 150.0" *(3302 mm)* front 60.0" *(1524 mm)* to 150.0" *(3302 mm)* **Wheel base** 120.4" *(3058 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 2.17 (3.50) second 2.63 (4.24) third 3.24 (5.21) fourth 3.99 (6.31) fifth 4.76 (7.66) sixth 5.86 (9.43) seventh 6.92 (11.13) eighth 8.57 (13.47) ninth 10.30 (16.58) tenth 12.51 (20.13) eleventh 15.14 (24.36) twelfth 18.64 (29.99) reverse 2.85 (4.58), 5.15 (8.28), 9.05 (14.56) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 2098 engine rpm **Unladen tractor mass** 24106 lb *(10934 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp-hr (g/kW-h)	Hp-hr-gal (kW-h/l)	Temp °F (°C) cool ing air	fuel	Boom no/h Hg (kPa)
				2nd Gear					
174 (122.09)	25061 (111.47)	2.45 (3.94)	2225	9.45	0.392 (0.299)	14.21 (2.86)	192 (85)	76 (24)	28.75 (97.36)
				3rd Gear					
178.54 (133.14)	23747 (105.70)	2.82 (4.54)	2036	8.09	0.365 (0.282)	15.09 (2.95)	183 (84)	76 (24)	28.75 (97.36)
				4th Gear					
189.20 (141.09)	21214 (95.59)	3.27 (5.26)	1903	5.79	0.352 (0.266)	16.01 (3.15)	184 (85)	76 (24)	28.75 (97.36)
				5th Gear					
191.67 (142.93)	17867 (79.68)	3.92 (6.43)	1900	3.92	0.332 (0.263)	16.18 (3.19)	185 (85)	82 (28)	28.65 (97.01)
				6th Gear					
193.81 (144.23)	14539 (64.82)	4.99 (8.03)	1895	2.88	0.329 (0.260)	16.35 (3.22)	186 (86)	83 (28)	28.83 (97.63)
				7th Gear					
195.41 (145.23)	12108 (54.26)	5.95 (9.57)	1902	2.31	0.327 (0.260)	16.38 (3.23)	188 (86)	84 (29)	28.83 (97.63)
				8th Gear					
192.83 (143.86)	10013 (44.54)	7.22 (11.62)	1900	1.81	0.331 (0.262)	16.22 (3.20)	187 (86)	86 (30)	28.82 (97.60)
				9th Gear					
192.73 (143.72)	8091 (35.99)	8.93 (14.38)	1900	1.65	0.331 (0.262)	16.24 (3.20)	189 (87)	88 (31)	28.82 (97.60)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h) 5th gear	78.0
Maximum Sound Level 4th gear	80.0
Transport speed—no load 12th gear	76.5
Bystander	—

TIRES AND WEIGHT

Rear Tires—No. size phs & psi (kPa)

Front Tires—No. size phs & psi (kPa)

Weight of Drawbar

Static Weight with Operator—Rear

Front

Total

Tested Without Ballast

From 19 (8.9) × rated 14 (9.5) rated 12 (8.5)

From 19 (8.9) × rated 14 (9.5) rated 12 (8.5)

14.5 cm (5.71 in)

11172 lb (5160 kg)

15590 lb (7070 kg)

26772 lb (12030 kg)

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 130° F (54° C). The drawbar pull in 2nd gear was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

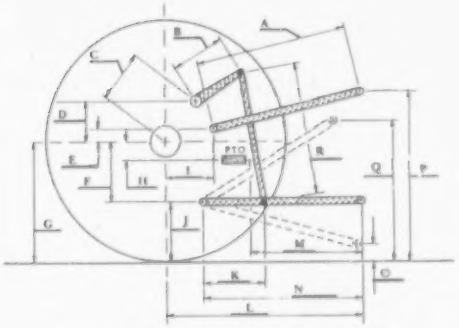
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1649**, Summary 087, August 20, 1991.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
G. J. HOFFMAN
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

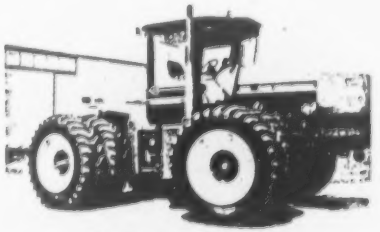
CATEGORY III
Quick Attach yes
Maximum Force Exerted Through Whole Range 12982 lbs (57.5 kN)
a) Opening pressure of relief valve N/A
Sustained pressure at compensator cutoff 2550 psi (176 bar)
a) Pump delivery rate at minimum pressure 29.0 GPM (109.8 l/min)
a) Pump delivery rate at maximum
Indicated power 21.9 GPM (99.5 l/min)
Delivery pressure 2350 psi (162 bar)
Power 34.1 HP (25.5 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.1	740
B	21.0	533
C	25.6	651
D	25.1	637
E	11.4	289
F	9.9	251
G	32.3	820
H	2.2	56
I	22.8	579
J	22.4	569
K	23.0	584
L	52.2	1326
L'	57.2	1453
M	20.0	508
N	42.0	1067
O	5.2	132
P	44.4	1128
Q	37.6	956
R	37.8	959

L' to end of Quick Attach



Case International 9230 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1650—SUMMARY 088
CASE INTERNATIONAL 9240 DIESEL
ALSO STEIGER 9240 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crankshaft speed rpm	Go/No (lb)	Rel/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1048 rpm)					
200.55 (149.55)	2199	11.68 (8.29)	0.407 (0.248)	17.17 (1.16)	
Standard Power Take-off Speed (1000 RPM)					
212.08 (158.15)	2098	11.68 (8.29)	0.392 (0.238)	17.85 (1.52)	
Maximum Power (2 Hours)					
215.87 (160.97)	2001	11.81 (8.37)	0.381 (0.233)	18.26 (1.64)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
200.55 (149.55)	2199	11.68 (8.29)	0.407 (0.248)	17.17 (1.16)	71°F (22°C)
177.18 (132.12)	2290	10.85 (7.69)	0.428 (0.261)	16.32 (1.32)	Relative humidity
150.36 (97.71)	2323	8.92 (5.33)	0.479 (0.292)	13.61 (2.16)	85%
87.70 (65.40)	2355	6.86 (2.56)	0.543 (0.331)	12.74 (2.33)	Barometric
65.49 (33.92)	2380	5.11 (2.03)	0.705 (0.429)	8.91 (2.26)	29.91" Hg (98.62 kPa)
0.16 (0.19)	2407	1.76 (1.71)	11.581 (23.196)	0.20 (0.01)	

Maximum Torque 605 lb ft (818 Nm) at 1093 rpm
Maximum Torque Rise 26.0%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool eng mod	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Power—5th Gear									
175.89 (131.16)	15540 (59.54)	4.94 (7.96)	2202	2.58	0.466 (0.283)	15.00 (2.96)	181 (83)	70 (21)	28.95 (98.04)
75% of Full at Maximum Power—5th Gear									
157.75 (102.72)	10006 (44.51)	5.16 (8.31)	2287	1.78	0.511 (0.311)	13.70 (2.70)	185 (85)	68 (21)	28.87 (97.77)
50% of Full at Maximum Power—5th Gear									
95.85 (69.97)	6672 (29.68)	5.27 (8.48)	2325	1.25	0.591 (0.359)	11.84 (2.33)	180 (82)	68 (21)	28.87 (97.77)
75% of Full at Reduced Engine Speed—6th Gear									
157.78 (102.74)	10002 (44.49)	5.17 (8.31)	1860	1.78	0.451 (0.274)	15.49 (3.05)	182 (83)	68 (21)	28.87 (97.77)
50% of Full at Reduced Engine Speed—6th Gear									
95.97 (70.07)	6672 (29.68)	5.28 (8.50)	1892	1.16	0.508 (0.309)	13.78 (2.72)	179 (82)	68 (21)	28.87 (97.77)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0992, U.S.A.

Dates of Test: June 5-14, 1991

Manufacturer: J I Case Co, 5401 Fifth Avenue North, Fargo ND 58102

FUEL OIL and TIME: Fuel No 2 Diesel **Cetane No.** 59.9 **Specific gravity** *converted to 60°/60°F (15°/15°C)* 0.8509 **Fuel weight** 6.995 lbs/gal *(0.838 kg/l)* **Oil SAE** 15W-40 **API service classification** CE, CD **To motor** 4.670 gal *(17.677 l)* **Drained from motor** 3.987 gal *(15.094 l)* **Transmission and final drive lubricant** Case III Hytran Plus fluid **Hydraulic lubricant** Case III Hytran Plus fluid **Total time engine was operated** 42.0 hours.

ENGINE: Make Consolidated Diesel Corporation Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *#4459851S* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** (as specified) 4.488" × 5.315" *(114.0 mm × 135.0 mm)* **Compression ratio** 16.5 to 1 **Displacement** 505 cu in *(8269 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** two thermostats.

ENGINE OPERATING PARAMETERS: Fuel rate 75.6-85.8 lb/hr *(34.3-38.9 kg/hr)* **High idle** 2550-2450 rpm **Turbo boost** nominal 12-15.5 psi *(81-106 kPa)* as measured 15.5 psi *(106 kPa)*

CHASSIS: Type four wheel drive with dual-tilt frame **Serial No.** *JCB0027868* **Tread width** rear 84.0" *(2135 mm)* and 130.7" *(3550 mm)* front 84.0" *(2135 mm)* to 139.7" *(3550 mm)* **Wheel base** 124.0" *(3150 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph** *(km/h)* first 2.25 *(3.62)* second 2.75 *(4.39)* third 3.36 *(5.40)* fourth 4.07 *(6.55)* fifth 4.95 *(7.93)* sixth 6.06 *(9.76)* seventh 7.36 *(11.52)* eighth 8.86 *(13.94)* ninth 10.86 *(17.16)* tenth 12.95 *(20.84)* eleventh 15.67 *(25.21)* twelfth 19.28 *(31.03)* reverse 2.95 *(4.24)*, 5.35 *(8.57)*, 9.36 *(15.06)* **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic for front wheels, electrohydraulic for rear wheels. Front and rear wheels may be steered independently or together **Power take-off** 1000 rpm at 2098 engine rpm **Unladen tractor mass** 28214 lb *(12798 kg)*

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Fuel Consumption Hp hr/gal (kW h/l)	Temp °F (°C) cool eng mod	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
1st Gear									
190.76 (119.88)	28747 (127.87)	2.10 (3.38)	2240	10.86	0.507 (0.308)	13.79 (2.72)	180 (82)	71 (22)	28.92 (97.93)
2nd Gear									
173.93 (229.70)	27059 (120.37)	2.41 (3.88)	2002	8.88	0.488 (0.296)	14.58 (2.87)	181 (83)	77 (25)	28.92 (97.93)
3rd Gear									
184.90 (137.88)	23555 (101.80)	2.97 (4.78)	2001	5.14	0.459 (0.275)	15.47 (3.05)	181 (83)	78 (26)	28.92 (97.93)
4th Gear									
187.52 (139.68)	19164 (85.25)	3.67 (5.90)	2002	3.65	0.445 (0.271)	15.70 (3.09)	182 (83)	79 (26)	28.92 (97.93)
5th Gear									
190.51 (141.91)	15956 (70.98)	4.47 (7.20)	2000	2.72	0.457 (0.266)	16.01 (3.16)	182 (83)	79 (27)	28.95 (98.04)
6th Gear									
188.54 (140.59)	12767 (56.78)	5.54 (8.91)	2002	2.50	0.442 (0.269)	15.92 (3.12)	181 (83)	71 (22)	28.94 (98.00)
7th Gear									
187.42 (139.76)	10729 (47.72)	6.55 (10.54)	2001	1.86	0.445 (0.271)	15.72 (3.10)	182 (83)	71 (22)	28.94 (98.00)
8th Gear									
185.74 (138.50)	8746 (38.90)	7.96 (12.82)	2002	1.60	0.451 (0.274)	15.52 (3.06)	184 (84)	80 (27)	28.92 (97.93)
9th Gear									
181.86 (135.61)	6929 (30.82)	9.84 (15.84)	2004	1.25	0.457 (0.278)	15.29 (3.01)	181 (83)	81 (27)	28.92 (97.93)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h) 5th gear	74.0
Maximum Sound Level 8th gear	76.5
Transport speed—no load 12th gear	76.5
Bystander	—

TIRES AND WEIGHT		Tested Without Ballast
Rear Tires	— Size, rear, psi & psi (kPa)	Four 20.8R38, * 16 (95) rears 12 (83)
Front Tires	— Size, rear, psi & psi (kPa)	Four 20.8R38, * 16 (95) rears 12 (83)
Height of Drawbar		14.5 in (370 mm)
Static Weight with Operator	— Rear	19744 lb (8essl kg)
	— Front	14500 lb (6621 kg)
	— Total	28580 lb (12879 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 130° F (54° C). The drawbar pull in 1st gear was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

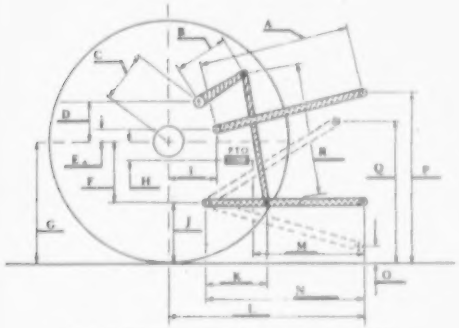
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1650**, Summary 088, October 17, 1991.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY	III
Quick Attach	yes
Maximum Force Exerted Through Whole Range	13212 lbs (58.8 kN)
a) Opening pressure of relief valve	NA
Sustained pressure at compensator cutoff	2550 psi (176 bar)
a) Pump delivery rate at minimum pressure	29.1 GPM (110.2 l/min)
a) Pump delivery rate at maximum hydraulic power	25.5 GPM (95.8 l/min)
Delivery pressure	2550 psi (162 bar)
Power	34.7 HP (25.9 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.3	744
B	21.0	533
C	26.3	667
D	25.1	637
E	11.4	289
F	9.9	251
G	33.7	855
H	2.2	56
I	25.3	642
J	23.8	604
K	25.0	634
L	54.7	1389
L'	59.7	1516
M	25.0	635
N	42.0	1067
O	6.6	167
P	45.6	1161
Q	38.3	972
R	37.5	951

L' to end of Quick Attach

Case International 9240 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1651—SUMMARY 096
CASE INTERNATIONAL 9250 DIESEL
ALSO STEIGER 9250 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power PTO (kW)	Crank shaft speed rpm	Fuel kg/h	Fuel kg/kWh	Fuel l/h	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1000 rpm)					
266.01 (198.37)	2100	14.63 (15.38)	0.364 (0.274)	18.16 (3.99)	
Maximum Power (5 Hours)					
275.05 (202.09)	1968	14.51 (14.16)	0.369 (0.274)	18.04 (3.97)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
266.01 (198.37)	2100	14.63 (15.38)	0.364 (0.274)	18.16 (3.99)	75°F (24°C)
237.66 (177.22)	2202	13.82 (12.71)	0.346 (0.247)	17.20 (3.78)	Relative humidity
180.05 (134.26)	2230	11.12 (4.22)	0.345 (0.250)	13.75 (3.11)	0%
121.01 (90.24)	2251	9.15 (10.27)	0.551 (0.423)	13.18 (2.90)	Barometer
61.27 (45.65)	2278	6.52 (24.69)	0.745 (0.491)	9.98 (2.19)	29.45" Hg (99.40 kPa)
1.05 (0.78)	2320	4.08 (15.15)	27.087 (16.477)	8.26 (1.69)	

Maximum Torque 927 lb-ft (1124 Nm) at 1700 rpm
Maximum Torque Rise 66.8%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp/h (g/kW h)	Hp/h gal (kW h/l)	Temp °F (°C) Load avg	Air outl	Barom in Hg (kPa)
Maximum Power—5th Gear									
257.29 (178.95)	17800 (79.18)	5.08 (8.05)	2102	2.54	0.478 (0.360)	16.33 (3.21)	171 (77)	51 (11)	29.09 (98.51)
75% of Pull at Maximum Power—5th Gear									
193.68 (141.24)	13388 (59.55)	5.51 (8.74)	2220	1.99	0.475 (0.360)	14.77 (2.90)	171 (77)	63 (17)	29.09 (98.51)
50% of Pull at Maximum Power—5th Gear									
128.62 (95.93)	8917 (39.66)	5.61 (8.98)	2249	1.44	0.504 (0.381)	12.93 (2.54)	171 (77)	63 (17)	29.09 (98.51)
75% of Pull at Reduced Engine Speed—6th Gear									
188.81 (140.79)	13376 (59.50)	5.29 (8.52)	1799	1.99	0.419 (0.316)	16.69 (3.28)	173 (78)	65 (18)	29.09 (98.51)
50% of Pull at Reduced Engine Speed—6th Gear									
128.45 (95.78)	8909 (39.63)	5.61 (8.99)	1827	1.55	0.453 (0.342)	15.42 (3.03)	171 (77)	63 (17)	29.09 (98.51)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: September 19-25, 1991

Manufacturer: J.I. CASE CO. 5001 First Avenue North, Fargo ND 58102

FUEL, OIL and TIME: Fuel No. 2 Diesel **Cetane** No. 55.9 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8505 **Fuel weight** 6.980 lbs/gal (0.838 kg/l) **Oil SAE** 15W-40 **API service classification** CF, CD **To motor** 8.967 gal (33.945 l) **Drained from motor** 8.716 gal (32.992 l) **Transmission and final drive lubricant** Case III Hytrans Plus fluid **Hydraulic lubricant** Case III Hytrans Plus fluid **Total time engine was operated** 21.0 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbochargers and intercooler **Serial No.** 71169104 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** (as specified) 4.921" x 5.354" (125.0 mm x 136.0 mm) **Compression ratio** 16.0 to 1 **Displacement** 611 cu in (10000 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium: temperature control** thermostat

ENGINE OPERATING PARAMETERS: Fuel rate 99.0-100.0 lb/hr (44.9-45.3 kg/hr) **High idle** 2250-2350 rpm **Turbo boost** nominal 21.26 psi (149.176 kPa) as measured 19.5 psi (134 kPa).

CHASSIS: Type four wheel drive with dual, articulated **Serial No.** JJ B0027278 **Tread width** rear 101" (1524 mm) to 130" (3302 mm) front 60" (1321 mm) to 130" (3302 mm) **Wheel base** 130" (3302 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** low 2.92 (4.74) second 2.81 (4.52) third 3.45 (5.56) fourth 4.29 (6.76) fifth 5.08 (8.17) sixth 6.25 (10.06) seventh 7.38 (11.88) eighth 8.95 (14.37) ninth 10.99 (17.69) tenth 13.35 (21.48) eleventh 16.10 (26.00) twelfth 19.88 (32.00) reverse 3.04 (4.89), 5.49 (8.84), 9.65 (15.53) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic **Power take-off** 1000 rpm at 2098 engine rpm **Unladen tractor mass** 36886 lb (16655 kg).

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (g/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) coolant avg	Air dry bulb	Barom inch Hg (kPa)
				1st Gear					
195.60 (145.77)	52565 (233.90)	2.24 (3.61)	2209	8.87	0.488 (0.297)	14.52 (2.92)	169 (76)	52 (11)	29.12 (98.61)
				2nd Gear					
221.55 (165.08)	51046 (227.09)	2.67 (4.30)	2150	7.18	0.472 (0.275)	15.48 (3.09)	171 (77)	52 (11)	29.15 (98.65)
				3rd Gear					
255.08 (171.82)	27855 (123.93)	5.14 (8.27)	1995	5.09	0.455 (0.264)	16.13 (3.24)	172 (78)	52 (11)	29.14 (98.68)
				4th Gear					
254.81 (171.00)	25191 (112.06)	5.86 (9.43)	1955	5.52	0.456 (0.266)	16.41 (3.29)	171 (77)	51 (11)	29.11 (98.58)
				5th Gear					
240.66 (179.45)	19519 (86.82)	8.02 (12.90)	1760	2.65	0.414 (0.252)	16.89 (3.39)	172 (78)	51 (11)	29.07 (98.44)
				6th Gear					
250.41 (186.73)	15705 (69.85)	9.72 (15.64)	1950	2.36	0.416 (0.253)	16.80 (3.37)	172 (78)	55 (12)	29.15 (98.71)
				7th Gear					
250.53 (186.82)	15239 (67.78)	9.79 (15.75)	1954	2.17	0.416 (0.253)	16.84 (3.38)	175 (79)	55 (12)	29.15 (98.71)
				8th Gear					
257.20 (176.88)	10869 (48.35)	14.23 (22.90)	1952	1.62	0.423 (0.256)	16.59 (3.33)	172 (78)	55 (12)	29.15 (98.71)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear chosen to 4.7 mph (7.5 km/h) 5th gear	74.0
Maximum Sound Level—1st gear	79.0
Transport speed—no load 12th gear	78.5
Bystander	—

TIRES AND WEIGHT

		Tested Without Ballast
Rear Tires	—No. size psi kPa	
Front Tires	—No. size psi kPa	
Height of Drawbar		
Static Weight with operator	—Rear	
	—Front	
	—Total	

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 131° F (55° C). The drawbar pull in 1st gear was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

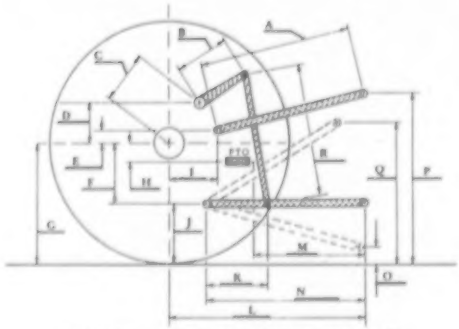
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1851, Summary 996, October 17, 1991.

LOUIS E. LEVITICUS
Engineer-in-Charge

R. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY	III
Quick Attach	yes
Maximum Force Exerted Through Whole Range	12942 lbs (57.6 kN)
a) Opening pressure of relief valve	N/A
Sustained pressure at compensator cut-off	3500 psi (172 bar)
a) Pump delivery rate at minimum pressure	27.8 GPM (105.2 l/min)
a) Pump delivery rate at maximum hydraulic power	24.1 GPM (91.2 l/min)
Delivery pressure	2500 psi (170 bar)
Power	92.5 HP (24.1 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	cm
A	29.1	740
B	21.0	533
C	25.6	651
D	25.1	637
E	11.4	289
F	9.9	251
G	36.1	917
H	2.2	56
I	22.8	579
J	26.2	666
K	25.0	584
L	52.2	1326
L'	57.2	1453
M	25.0	636
N	42.0	1067
O	9.0	229
P	48.2	1225
Q	41.5	1053
R	37.8	959

L' to end of Quick Attach

Case International 9250 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1652—SUMMARY 097
CASE INTERNATIONAL 9260 DIESEL
ALSO STEIGER 9260 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power PTO (kW)	Crank shaft speed rpm	Fuel/hr	Rel sp fuel cons g/kWh	Hp hr/gal (kg/kWh)	Atmospheres Enclosure
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—998 rpm)					
265.84 (198.24)	2098	14.75 (35.74)	0.387 (0.236)	18.05 (1.36)	
Maximum Power (2 Hours)					
270.26 (201.53)	2060	14.60 (35.26)	0.376 (0.230)	18.51 (1.65)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
265.84 (198.24)	2098	14.75 (35.74)	0.387 (0.236)	18.05 (1.36)	75°F (24°C)
234.65 (174.98)	2192	13.86 (32.48)	0.415 (0.253)	16.93 (1.33)	Relative humidity
178.61 (133.19)	2222	11.42 (43.22)	0.447 (0.272)	15.65 (1.04)	51%
119.06 (89.21)	2241	8.63 (32.66)	0.504 (0.307)	13.87 (2.31)	Barometer
60.64 (45.22)	2256	6.65 (25.18)	0.767 (0.468)	9.12 (1.80)	29.23" Hg (98.99 kPa)
9.78 (0.36)	2301	4.16 (15.76)	57.186 (22.629)	0.19 (0.01)	

Maximum Torque 981 lb ft (1334 Nm) at 1296 rpm
Maximum Torque Rise 47.8%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool mtg	Air duct bulb	Barom ins Hg (kPa)
Maximum Power—5th Gear									
256.15 (176.68)	17841 (79.36)	4.96 (7.99)	2098	2.45	0.430 (0.263)	16.09 (1.11)	169 (76)	54 (12)	29.30 (99.22)
75% of Full at Maximum Power—5th Gear									
187.69 (129.81)	15420 (59.70)	5.24 (8.43)	2204	2.09	0.481 (0.295)	14.53 (1.00)	171 (77)	57 (14)	29.20 (98.88)
50% of Full at Maximum Power—5th Gear									
127.57 (95.21)	8952 (39.82)	5.35 (8.61)	2257	1.44	0.571 (0.350)	12.25 (0.84)	166 (74)	67 (19)	29.20 (98.88)
75% of Full at Reduced Engine Speed—6th Gear									
187.65 (139.93)	15417 (68.57)	5.24 (8.43)	1781	1.99	0.421 (0.258)	16.59 (1.27)	171 (77)	68 (20)	29.10 (98.56)
50% of Full at Reduced Engine Speed—6th Gear									
127.53 (95.18)	8960 (39.76)	5.35 (8.61)	1817	1.44	0.458 (0.279)	15.25 (1.00)	164 (73)	68 (20)	29.10 (98.56)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832, U.S.A.

Dates of Test: September 17-26, 1991

Manufacturer: J.I. CASE CO. 3401 First Avenue North, Fargo ND 58102

FUEL, OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 55.9 **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8395 **Fuel weight** 6.990 lbs/gal *(0.838 kg/l)* **Oil SAE** 15W-40 **API service classification** CE, CD **To motor** 8.806 gal *(33.334 l)* **Drained from motor** 8.450 gal *(32.021 l)* **Transmission and final drive lubricant** Case IH Hytran Plus fluid **Hydraulic lubricant** Case IH Hytran Plus fluid **Total time engine was operated** 22.0 hours

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 34642428 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** (as specified) 4.921" × 5.354" *(125.0 mm × 136.0 mm)* **Compression ratio** 16.0 to 1 **Displacement** 611 cu in *(10000 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat

ENGINE OPERATING PARAMETERS: Fuel rate 99.0-104.0 lb/hr *(44.9-47.2 kg/hr)* **High idle** 2250-2350 rpm **Turbo boost** nominal 21-26 psi *(149-176 kPa)* as measured 20.0 psi *(138 kPa)*

CHASSIS: Type four wheel drive with dual-rigid frame **Serial No.** JJC B0022218 **Tread width** rear 84.0" *(2135 mm)* and 139.7" *(3550 mm)* front 84.0" *(2135 mm)* and 139.7" *(3550 mm)* **Wheel base** 124.0" *(3150 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph** *(km/h)* first 2.31 *(3.71)* second 2.79 *(4.49)* third 3.44 *(5.53)* fourth 4.17 *(6.71)* fifth 5.05 *(8.12)* sixth 6.21 *(9.99)* seventh 7.55 *(11.80)* eighth 8.87 *(14.27)* ninth 10.92 *(17.57)* tenth 13.25 *(21.33)* eleventh 16.04 *(25.81)* twelfth 19.24 *(31.22)* reverse 3.01 *(4.85)*, 5.45 *(8.77)*, 9.58 *(15.42)* **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic by front wheels, electrohydraulic for rear wheels. Front and rear wheels may be steered independently or together **Power take-off** 1088 rpm at 2098 engine rpm **Unladen tractor mass** 30155 lb *(13669 kg)*

DRAWBAR PERFORMANCE
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool mtg	Air duct bulb	Barom ins Hg (kPa)
1st Gear									
186.26 (138.90)	51618 (229.64)	2.21 (3.56)	2200 est	9.45	0.491 (0.299)	14.24 (1.09)	166 (74)	60 (16)	29.29 (99.19)
2nd Gear									
212.58 (158.52)	29551 (131.45)	2.70 (4.34)	2159	6.86	0.482 (0.293)	14.51 (1.08)	169 (76)	65 (18)	29.28 (99.15)
3rd Gear									
230.75 (172.06)	27486 (122.31)	3.16 (5.08)	2019	5.27	0.436 (0.265)	16.04 (1.19)	171 (77)	68 (20)	29.28 (99.15)
4th Gear									
237.08 (176.78)	22993 (102.28)	3.87 (6.23)	2001	3.84	0.429 (0.261)	16.30 (1.21)	170 (77)	56 (13)	29.30 (99.22)
5th Gear									
241.15 (179.82)	19890 (84.92)	4.74 (7.62)	2000	2.54	0.421 (0.256)	16.60 (1.23)	169 (76)	52 (11)	29.30 (99.22)
6th Gear									
240.71 (179.50)	17462 (77.68)	5.84 (9.40)	1999	2.27	0.420 (0.255)	16.64 (1.24)	171 (77)	56 (13)	29.30 (99.22)
7th Gear									
240.58 (179.25)	15009 (67.82)	6.93 (11.15)	2004	2.09	0.426 (0.259)	16.38 (1.21)	171 (77)	57 (14)	29.30 (99.22)
8th Gear									
236.66 (176.48)	10575 (47.04)	8.99 (13.91)	2000	1.53	0.433 (0.263)	16.16 (1.18)	171 (77)	58 (14)	29.30 (99.22)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h) 5th gear	76.5
Maximum Sound Level—8th gear	77.0
Transport speed—no load 12th gear	76.5
Bystander	

TIRES AND WEIGHT

	Tires	Tested Without Ballast
Rear Tires	No. size ply & psi (kPa)	Front 20.8R42 38" static 14,945 static 12,485
Front Tires	No. size ply & psi (kPa)	Rear 30.5R32 38" static 14,945 static 12,485
Height of Drawbar		16.5 in. (420 mm)
Static Weight with operator	Rear	11030 lb (4983 kg)
	Front	12,940 lb (5872 kg)
	Total	30,900 lb (14,014 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 127° F (53° C). The drawbar pull in 1st gear was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

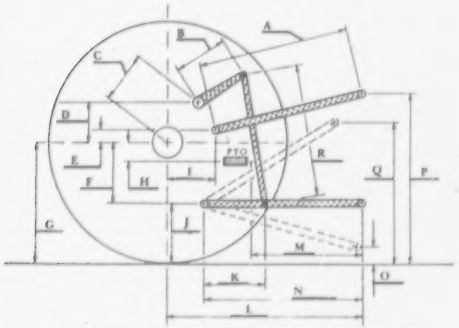
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1652**, Summary 097, October 17, 1991.

LOUIS F. LEVEILLEUX
Engineer-in-Charge

R. VON BARGEN
R. D. GRISSO
L. E. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

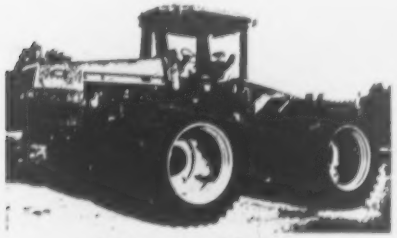
CATEGORY	III
Quick Attach	yes
Maximum Force Exerted Through Whole Range	13212 lbs (58.8 kN)
i) Opening pressure of relief valve	NA
Sustained pressure at compensator cutoff	2470 psi (170 bar)
ii) Pump delivery rate at minimum pressure	28.0 GPM (106.0 l/min)
iii) Pump delivery rate at maximum hydraulic power	24.6 GPM (93.1 l/min)
Delivery pressure	2240 psi (154 bar)
Power	12.3 HP (24.0 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.3	744
B	21.9	555
C	26.3	667
D	25.1	637
E	11.4	289
F	9.9	251
G	36.1	917
H	2.2	56
I	25.3	642
J	26.2	666
K	23.0	584
L	54.7	1389
L'	59.7	1516
M	25.0	635
N	42.0	1067
O	9.0	229
P	48.2	1225
Q	40.7	1034
R	37.5	953

L' to end of Quick attach



Case International 9260 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

NEBRASKA OECD TRACTOR TEST 1653—SUMMARY 098
CATERPILLAR CHALLENGER 65B DIESEL
10 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel Consumption Gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1024 rpm)					
245.29 (182.85)	2100	15.16 (57.39)	0.432 (0.263)	16.17 (3.56)	
Maximum Power (Two Hours)					
257.29 (191.79)	1955	15.54 (58.87)	0.417 (0.254)	16.77 (3.69)	
Standard Power Take-off Speed (1000 rpm)					
250.16 (186.51)	2050	15.52 (57.99)	0.428 (0.260)	16.53 (3.63)	Air temperature
VARYING POWER AND FUEL CONSUMPTION					77°F (25°C)
245.29 (182.85)	2100	15.16 (57.39)	0.432 (0.263)	16.17 (3.56)	
215.24 (160.50)	2106	13.86 (52.47)	0.450 (0.274)	15.59 (3.43)	Relative humidity
164.54 (122.71)	2200	11.53 (43.66)	0.482 (0.293)	14.30 (3.15)	95%
111.22 (82.94)	2249	8.74 (33.08)	0.556 (0.339)	12.52 (2.75)	Barometer
56.35 (42.03)	2279	6.52 (24.68)	0.809 (0.492)	8.64 (1.90)	29.07" Hg (98.44 kPa)
0.54 (0.40)	2395	4.38 (16.59)	56.618 (34.441)	0.12 (0.02)	

Maximum Torque 822 lb ft (1115 Nm) @ 1300 RPM
Maximum Torque Rise 34.1%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull (lbf)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) cool. eng. meas	Air dry bulb	Barom inch Hg (kPa)
Maximum Power—4th Gear									
220.52 (164.29)	15775 (70.17)	5.24 (8.43)	2101	4.24	0.497 (0.302)	14.98 (3.27)	177 (80)	64 (18)	29.08 (98.47)
75% of Pull at Maximum Power—4th Gear									
172.86 (128.82)	11817 (52.56)	5.67 (8.81)	2189	0.93	0.545 (0.331)	12.84 (2.73)	177 (80)	76 (24)	29.05 (98.36)
50% of Pull at Maximum Power—4th Gear									
117.69 (87.71)	7876 (35.05)	5.59 (9.00)	2291	0.66	0.576 (0.350)	10.99 (2.34)	175 (79)	76 (24)	29.05 (98.36)
75% of Pull at Reduced Engine Speed—5th Gear									
171.78 (128.03)	11821 (52.58)	5.65 (9.11)	1897	0.95	0.499 (0.303)	14.00 (2.98)	176 (80)	76 (24)	29.05 (98.36)
50% of Pull at Reduced Engine Speed—5th Gear									
117.61 (87.70)	7888 (35.09)	5.59 (9.00)	1942	0.66	0.560 (0.340)	12.49 (2.66)	175 (79)	76 (24)	29.05 (98.36)

Location of Test: Tractor Testing Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832 U.S.A.

Dates of Test: October 2-11, 1991

Manufacturer: Caterpillar Inc., 100 N.E. Adams St., Peoria, Illinois 61629

FUEL, OIL AND TIME: **Fuel** No. 2 Diesel **Cetane No.** 55.9 **Specific gravity converted to 60°/60°F** (15°/15°C) 0.8395 **Fuel weight** 6.990 lbs/gal (0.838 kg/l) **Oil SAE** 10W30 **API service classification** CE, CD, SF **To motor** 5.904 gal (22.351 l) **Drained from motor** 5.836 gal (22.094 l) **Transmission and final drive lubricant** SAE 30W API CD/TO-2 fluid **Hydraulic lubricant** Caterpillar CAP fluid **Total time engine was operated** 21.5 hours.

ENGINE: **Make** Caterpillar Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *98Z05806* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** (as specified) 4.75" × 6.00" (120.6 mm × 152.4 mm) **Compression ratio** 15.0 to 1 **Displacement** 638 cu in (10450 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, engine coolant heat exchanger for transmission oil, radiator for steering oil, radiator for hydraulic oil **Fuel filter** one paper cartridge and screen **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat.

ENGINE OPERATING PARAMETERS: **fuel rate** 96.9-107.0 lb/hr (44.0-48.6 kg/hr) **high idle** 2220-2340 rpm **Turbo boost** nominal 14.5-19.7 psi (100-136 kPa) as measured 18.4 psi (127 kPa)

CHASSIS: **Type** track layer—rubber track **Serial No.** *7TC02010* **Tread width** 84.6" (2150 mm) **Length of track on ground** 107.0" (2718 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 2.6 (4.2) second 4.0 (6.4) third 4.7 (7.5) fourth 5.5 (8.6) fifth 6.1 (9.9) sixth 7.0 (11.3) seventh 8.1 (13.0) eighth 9.3 (14.9) ninth 12.0 (19.3) tenth 18.1 (29.1) reverse 1.9 (3.1), 4.5 (7.2) **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** differential steering hydrostatically actuated by steering wheel **Power take-off** 1000 rpm at 2049 engine rpm **Unladen tractor mass** 34050 lb (15416 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

DRAWBAR PERFORMANCE AT 1900 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) coolant eng oil	Air dry bulb	Barom inch Hg (kPa)
1st Gear									
190.66 (142.17)	52714 (235.52)	2.19 (3.52)	2002	14.54	0.565 (0.344)	12.36 (2.61)	176 (80)	70 (21)	28.78 (97.46)
2nd Gear									
222.57 (165.82)	24415 (108.59)	3.82 (5.50)	1891	5.56	0.489 (0.297)	14.29 (3.02)	178 (81)	72 (22)	28.98 (97.87)
3rd Gear									
228.72 (170.55)	20958 (93.24)	4.39 (6.59)	1897	2.98	0.474 (0.288)	14.75 (3.91)	177 (79)	65 (18)	28.97 (98.10)
4th Gear									
229.19 (170.91)	18395 (80.93)	4.72 (7.60)	1900	1.56	0.471 (0.286)	14.83 (2.92)	177 (80)	63 (17)	28.95 (98.17)
5th Gear									
228.20 (170.17)	15757 (70.09)	5.44 (8.75)	1900	1.24	0.468 (0.284)	14.93 (3.94)	176 (80)	58 (14)	29.00 (98.21)
6th Gear									
224.56 (167.50)	13467 (59.90)	6.25 (10.05)	1897	1.09	0.481 (0.292)	13.54 (3.58)	179 (82)	67 (19)	28.96 (98.07)
7th Gear									
225.43 (166.63)	11672 (51.92)	7.18 (11.55)	1901	0.98	0.485 (0.294)	13.41 (3.54)	179 (82)	69 (21)	28.93 (98.00)
8th Gear									
219.76 (163.88)	10019 (44.56)	8.23 (13.24)	1895	0.82	0.494 (0.300)	13.15 (3.47)	179 (82)	71 (22)	28.92 (97.97)

DRAWBAR PERFORMANCE AT 2100 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull (lbf)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) coolant eng oil	Air dry bulb	Barom inch Hg (kPa)
1st Gear									
199.64 (148.72)	51875 (241.78)	2.55 (4.10)	2099	0.49	0.550 (0.335)	12.99 (2.76)	177 (81)	70 (21)	28.78 (97.46)
2nd Gear									
215.85 (160.90)	21108 (93.88)	3.84 (6.17)	2098	2.24	0.508 (0.309)	15.75 (3.71)	178 (81)	72 (22)	28.88 (97.80)
3rd Gear									
219.81 (163.84)	18048 (80.27)	4.56 (7.34)	2100	1.51	0.497 (0.302)	14.86 (3.77)	177 (81)	66 (19)	28.97 (98.10)
4th Gear									
220.52 (164.29)	15775 (70.17)	5.24 (8.43)	2101	1.24	0.497 (0.302)	14.86 (3.77)	177 (80)	64 (18)	28.98 (98.13)
5th Gear									
217.56 (162.23)	13551 (60.28)	6.02 (9.69)	2099	1.09	0.495 (0.301)	14.11 (3.58)	176 (80)	59 (15)	29.00 (98.21)
6th Gear									
212.82 (158.70)	11530 (51.29)	6.92 (11.14)	2099	0.95	0.512 (0.311)	13.66 (3.69)	178 (81)	68 (20)	28.95 (98.04)
7th Gear									
209.88 (156.51)	9914 (44.10)	7.94 (12.78)	2100	0.82	0.521 (0.317)	13.51 (3.63)	178 (81)	70 (21)	28.93 (97.97)
8th Gear									
206.70 (154.13)	8498 (37.80)	9.12 (14.68)	2101	0.71	0.531 (0.323)	13.16 (3.59)	179 (82)	71 (22)	28.93 (97.96)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—4th Gear	78.5
75% of pull at maximum power—6th Gear	74.0
50% of pull at maximum power—6th Gear	73.5
50% of pull at reduced engine speed—5th Gear	72.0
Bystander (10th Gear)	92.0

TIRES AND WEIGHT — Tested Without Ballast

Rear Tires	—No. size ply & psi (bar)	4/4
Front Tires	—No. size ply & psi (bar)	2/2
Height of Tractor		10 ft 3 in (3.120 mm)
Basic Weight with operator	lb (kg)	
	— Front	
	— Total	34195 lb (15510 kg)

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 168° F (73° C). The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standards test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1085**, Summary 098, November 4, 1991.

LOUIS I. LEVEILLEUX
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi (bar)				2500 (172)	
Location				remote outlet	
Hydraulic oil temperature °F(°C)				142 (61)	
Location				hydraulic reservoir	
Category				III	
Quick attach				no	
Hitch point distance to ground level in. (mm)	8.6 (218)	15.8 (401)	24.4 (620)	35.6 (851)	43.9 (1115)
Lift force on frame lb (kN)	30640 (136.3)	28050 (124.8)	23660 (105.3)	19350 (86.1)	13660 (60.9)

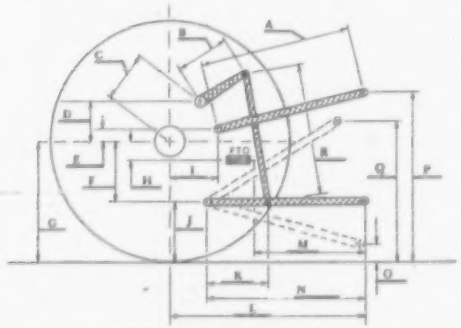
THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY III
Quick Attach: none
Maximum Force Exerted Through Whole Range: 11367 lbs (50.6 kN)

i) Opening pressure of relief valve: NA
Sustained pressure at compensator cutoff: 2490 psi (172 bar)

ii) Pump delivery rate at minimum pressure: 27.1 GPM (102.6 l/min)

iii) Pump delivery rate at maximum hydraulic power: 25.6 GPM (89.3 l/min)
Delivery pressure: 2280 psi (157 bar)
Power: 31.4 HP (23.4 kW)



Hitch Dimensions as Tested — No Load

	inch	mm
A	26.7	679
B	21.5	545
C	18.6	472
D	16.5	419
E	16.6	422
F	3.9	98
G	23.9	606
*H	−5.1	−130
I	14.6	370
J	20.0	508
K	21.1	535
L	40.6	1030
M	25.5	648
N	30.1	765
O	9.0	229
P	47.0	1194
Q	37.7	958
R	26.1	663

*PTO is above rear axle

Caterpillar Challenger 65B Diesel

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NEBRASKA TRACTOR TEST 1655—BELARUS 572 DIESEL
ALSO BELARUS 505, 525 and 570 DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (L/h)	lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/L)	Temperature °F (°C) Cooling medium	Air in/out bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—596 rpm)								
61.24 (45.67)	1800	5.58 (21.16)	0.498 (0.268)	17.12 (3.37)	192 (89)	59 (15)	75 (24)	28.74 (97.11)
Standard Power Take-off Speed — (540 rpm)—One Hour								
59.41 (44.30)	1652	5.39 (20.41)	0.498 (0.243)	17.53 (3.85)	187 (86)	60 (16)	76 (25)	28.70 (97.19)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
54.79 (40.86)	1808	5.15 (19.50)	0.492 (0.244)	17.37 (3.82)	176 (80)	62 (17)	79 (26)	
0.52 (0.39)	1944	0.95 (3.61)	20.333 (12.368)	0.34 (0.07)	172 (78)	62 (17)	80 (27)	
27.82 (20.75)	1950	1.89 (7.16)	0.470 (0.286)	14.70 (2.90)	164 (73)	63 (17)	80 (27)	
61.69 (46.00)	1795	5.54 (21.00)	0.493 (0.244)	17.44 (3.44)	185 (85)	61 (16)	78 (26)	
14.06 (10.48)	1959	1.40 (5.31)	0.498 (0.423)	10.02 (1.97)	159 (71)	63 (17)	81 (27)	
41.47 (30.93)	1915	2.50 (9.46)	0.421 (0.256)	16.60 (3.27)	168 (76)	63 (17)	81 (27)	
Av	**55.56**	**1905**	**2.24**	**0.468**	**14.92**	**167**	**62**	**80**	**28.67**
Av	**(41.88)**		**(8.46)**	**(0.285)**	**(2.94)**	**(75)**	**(17)**	**(27)**	**(97.16)**

DRAWBAR PERFORMANCE
(Front Drive in Automatic Mode)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (L/h)	lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/L)	Temp °F (°C) Cool mfg med	Air in/out bulb	Air dry bulb	Barom in/Hg (kPa)
Maximum Available Power — Two Hours 11th (5H) Gear											
55.49 (19.89)	5729 (16.39)	5.58 (9.66)	1795	5.48	5.54 (21.00)	0.465 (0.283)	15.11 (2.98)	178 (81)	51 (11)	58 (14)	28.64 (96.99)
75% of Pull at Maximum Power — Ten Hours 11th (5H) Gear											
44.00 (32.81)	2866 (12.75)	5.76 (9.26)	1900	2.48	2.99 (11.31)	0.475 (0.289)	14.73 (2.90)	178 (81)	54 (12)	66 (19)	28.69 (97.15)
50% of Pull at Maximum Power — Two Hours 11th (5H) Gear											
29.64 (22.10)	1917 (8.53)	5.80 (9.33)	1909	1.96	2.50 (8.69)	0.542 (0.329)	12.91 (2.54)	171 (77)	65 (18)	76 (24)	28.58 (96.77)
50% of Pull at Reduced Engine Speed — Two Hours 16th (8H) Gear											
29.62 (22.09)	1916 (8.52)	5.80 (9.33)	1720	1.85	1.94 (7.34)	0.457 (0.278)	15.28 (3.01)	169 (76)	65 (18)	81 (27)	28.57 (96.74)

Department of Biological Systems Engineering

Dates of Test: October 16–25, 1991

Manufacturer: MINSK TRACTOR WORKS, MTZ, Minsk USSR

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 55.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F (15/15°C)** 0.8395 **Fuel weight** 6.990 lbs/gal *(0.838 kg/l)* **Oil SAE** 10W-30 **API service classification** SG, CF **To motor** 2.856 gal *(10.737 l)* **Drained from motor** 2.711 gal *(10.264 l)* **Transmission and final drive lubricant** SAE 90 gear lubricant **Hydraulic lubricant** SAE 30 **Total time engine was operated** 41.0 hours.

ENGINE: Make MTZ **Model** 10242 Diesel **Type** four cylinder vertical **Serial No.** 725798 **Crankshaft** longitudinal **Rated rpm** 1800 **Bore and stroke** (as specified) 4.331" × 4.921" *(110 mm × 125.0 mm)* **Compression ratio** 16 to 1 **Displacement** 290 cu in *(4750 ml)* **Starting system** 24 volt **Lubrication** pressure **Air cleaner** oil bath with precleaner **Oil filter** full flow centrifugal **Oil cooler** radiator for crankcase oil **Fuel filter** one paper element and one cleanable screen **Muffler** vertical **Cooling medium temperature control** one thermostat and radiator shutter.

ENGINE OPERATING PARAMETERS: fuel rate: maximum 25.1 lb/h *(11.4 kg/h)* **high idle:** not to exceed 1950 rpm.

CHASSIS: Type front wheel assist **Serial No.** 2588[illegible] **Tread width** rear 58.7" *(1440 mm)* to 82.7" *(2100 mm)* front 53.1" *(1350 mm)* to 70.9" *(1800 mm)* **Wheel base** 98.5" *(2450 mm)* **Center of gravity** (without operator or ballast, with minimum fuel, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 36.9" *(937 mm)* Vertical distance above roadway 40.4" *(1025 mm)* Horizontal distance from center of rear wheel tread 0.4" *(11 mm)* to the right **Hydraulic control system** direct engine drive with throttle lever (engaged during test) **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.0 *(1.6)* second 1.3 *(2.1)* third 1.7 *(2.7)* fourth 2.2 *(3.6)* fifth 2.9 *(4.6)* sixth 3.5 *(5.6)* seventh 3.8 *(6.1)* eighth 4.2 *(6.7)* ninth 4.7 *(7.4)* tenth 4.9 *(7.9)* eleventh 5.5 *(8.8)* twelfth 6.0 *(9.7)* thirteenth 6.5 *(10.4)* fourteenth 7.1 *(11.4)* fifteenth 7.9 *(12.8)* sixteenth 9.4 *(15.1)* seventeenth 15.2 *(21.2)* eighteenth 17.4 *(28.1)* reverse 2.0 *(3.4)*, 2.8 *(4.4)*, 3.5 *(5.7)*, 4.7 *(7.5)* **Clutch** single dry disc operated by foot pedals **Brakes** dry disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 156" *(3.96 m)* left 191" *(4.85 m)* (on concrete surface without brake) right 175" *(4.45 m)* left 215" *(5.46 m)* **Turning space diameter** (on concrete surface with brake applied) right 329" *(8.20 m)* left 393" *(9.98 m)* (on concrete surface without brake) right 361" *(9.17 m)* left 441" *(11.20 m)* **Power take-off** 540 rpm at 1652 engine rpm **Unladen tractor mass** 8510 lb *(3770 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

***NOTE:** Tractor is shipped with rear weights—168 lb *(76 kg)* and front weight package—492 lb *(223 kg)*.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and and Nebraska test procedures. Startup was delayed twice due to malfunction in the starter circuit. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 151°F *(66°C)*. Thirteen gears were chosen between 15% slip and 16 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1655**, November 25, 1991.

LOUIS F. LEVEILLEUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

MAXIMUM POWER IN SELECTED GEARS

47.75 (35.59)	9521 (42.46)	1.92 (3.09)	1807	14.66	9th (2H) Gear	169 (76)	49 (9)	54 (12)	28.65 (97.02)
53.00 (39.52)	7329 (32.60)	2.71 (4.36)	1799	5.78	5th (3L) Gear	170 (77)	49 (9)	54 (12)	28.65 (97.02)
55.94 (40.22)	5945 (26.44)	3.40 (5.48)	1805	4.75	6th (4L) Gear	191 (88)	61 (16)	72 (22)	28.58 (96.78)
54.94 (40.97)	5632 (25.05)	3.66 (5.89)	1798	4.52	7th (5H) Gear	190 (88)	59 (15)	68 (20)	28.57 (96.75)
54.32 (40.51)	5052 (22.46)	4.05 (6.51)	1798	4.02	8th (5L) Gear	188 (86)	57 (14)	64 (18)	28.57 (96.75)
54.99 (41.00)	4552 (20.25)	4.51 (7.26)	1797	3.66	9th (6H) Gear	190 (88)	59 (15)	69 (21)	28.58 (96.78)
55.01 (41.02)	4342 (19.31)	4.75 (7.65)	1798	3.66	10th (6L) Gear	179 (81)	51 (11)	59 (15)	28.26 (95.69)
55.09 (41.08)	3830 (17.04)	5.39 (8.68)	1798	3.22	11th (7H) Gear	179 (81)	50 (10)	57 (14)	28.26 (95.69)
54.65 (40.76)	3395 (15.55)	5.86 (9.43)	1791	2.93	12th (7L) Gear	184 (84)	52 (11)	54 (12)	28.25 (95.65)
54.48 (40.63)	3222 (14.33)	6.14 (9.88)	1799	2.71	13th (8H) Gear	177 (81)	50 (10)	57 (14)	28.26 (95.68)
54.29 (40.21)	2886 (12.84)	6.89 (11.09)	1798	2.56	14th (8L) Gear	182 (83)	52 (11)	52 (11)	28.25 (95.65)
53.63 (39.99)	2568 (11.42)	7.83 (12.60)	1799	2.20	15th (7H) Gear	184 (84)	50 (10)	45 (7)	28.57 (96.74)
52.03 (38.80)	2098 (9.32)	9.51 (14.98)	1801	1.88	16th (8H) Gear	192 (89)	50 (10)	46 (8)	28.57 (96.75)

LUGGING ABILITY IN 11th (5H) GEAR

Crankshaft Speed rpm	1798	1619	1335	1257	1071	902
Pull—lbs (kN)	5850 (25.99)	6201 (28.09)	6565 (29.11)	6720 (29.90)	6926 (29.78)	6849 (29.79)
Increase in Pull %	0	10	19	23	23	16
Power—Hp (kW)	55.09 (41.08)	54.20 (40.41)	52.05 (38.82)	47.30 (34.72)	39.57 (29.36)	31.92 (23.80)
Speed—Mph (km/h)	5.39 (8.68)	4.84 (7.79)	3.74 (6.00)	3.74 (6.02)	3.19 (5.14)	2.69 (4.33)
Slip %	5.22	3.32	3.05	3.05	3.05	3.66

TRACTOR SOUND LEVEL	Without cab dB(A)	With cab dB(A)
Maximum Available Power—Two Hours	91.0	83.5
75% of Pull at Maximum Power—Ten Hours	91.0	82.0
50% of Pull at Maximum Power—Two Hours	90.0	82.5
50% of Pull at Reduced Engine Speed—Two Hours	87.5	81.0
Bystander in 10th (9H) gear	82.5	80.5

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Temp °F (°C) Cool mfg med	Air in/out bulb	Air dry bulb	Barom in/Hg (kPa)

MAXIMUM POWER IN SELECTED GEARS

MAXIMUM POWER (4WD MODE)

54.51 (40.64)	9783 (43.52)	5.11 (8.23)	1802	2.57	11th (5H) Gear	191 (88)	60 (16)	70 (21)	28.58 (96.78)

MAXIMUM PULL (2WD MODE)

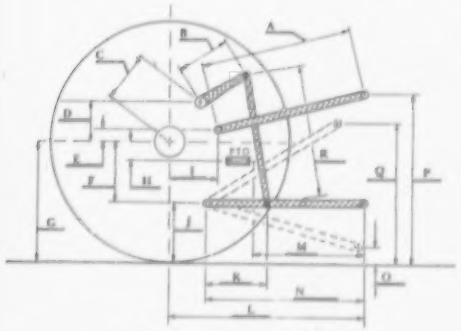
49.58 (36.97)	7410 (32.96)	2.54 (4.09)	1800	13.84	5th (3) Gear	175 (79)	49 (9)	54 (12)	28.65 (97.05)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—Size, size, rib & psi (kPa)	Two 15.5/80R × 24 (16/65)	Two 15.5/80R × 24 (16/65)
Ballast	—Liquid in tires	690 lb. (269 kg)	None
	—Cast iron weights	None	None
Front Tires	—Size, size, rib & psi (kPa)	Two 11.2/20 × 20 (14/60)	Two 11.2/20 × 20 (14/60)
Ballast	—Liquid in tires	None	None
	—Cast iron weights	536 lb. (242 kg)	None
Height of Drawbar		13.0 in (330 mm)	13.0 in (330 mm)
Static Weight with Operator	—Rear	7060 lb. (3202 kg)	6790 lb. (3079 kg)
	—Front	3760 lb. (1705 kg)	3550 lb. (1610 kg)
	—Total	10820 lb. (4729 kg)	10340 lb. (4689 kg)

THREE POINT HITCH PERFORMANCE

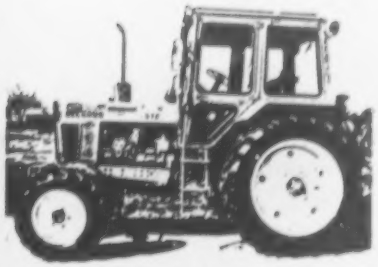
Observed Maximum Pressure psi (kPa)	2849	(19570)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	154	(68)
Location	hydraulic reservoir	

	Maximum Lift Capacity	
QUICK ATTACH	No	
CATEGORY	II	
LOAD lbs (kg)	4366	(1980)
13600 mv	2.90	
HITCH POINT MOVEMENT in (mm)		
Lowest position	12.0	(305)
Top of travel range	36.0	(914)
Highest position	36.2	(919)
LOAD CG MOVEMENT in (mm)		
Lowest position	11.3	(287)
Top of travel range	42.0	(1067)
Highest position	42.2	(1072)



Hitch Dimensions as Tested — No Load

	inch	mm
A	24.1	612
B	10.2	259
C	17.6	447
D	10.6	269
E	6.5	160
F	9.6	244
G	29.5	744
H	4.6	117
I	19.0	483
J	19.7	500
K	18.0	457
L	42.8	1087
M	26.0	660
N	33.9	861
O	8.0	203
P	38.7	983
Q	35.0	889
R	19.5	495



Belarus 572 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell W. Nelson, Dean and Director

Ten-Year Summary of Test Reports, 1982-1991

MAKE AND MODEL OF TRACTOR	Test No.	Fuel Used	Weight With Ballast	Lbs. Ballast Carried	ENGINE No. of Cylinders	Bore and Stroke	Displacement Cu. in.	Rated RPM	Max. PTO HP at Rated Engine RPM	Std. PTO RPM	Max. PTO HP Std. PTO RPM	Max. Drawbar HP	MPH at Max. Dwbr. HP	Max. Lbs. Pull	FUEL CONSUMPTION (HP Hours Per Gallon) at: Max. PTO HP at Std. PTO RPM	PTO Average at Varying Power	—Varing Drawbar Power— Max. Available Power	75% of Pull Max. Power	50% of Pull at Max. Power
Allis Chalmers																			
6070	1545	Die.	10515	3055	4	3.875x4.25	200	2300	70.78	540	71.01	59.56	7.90	7997	16.45	12.60	13.38	12.30	10.40
6140	1445	Die.	6195	1735	3	3.858x4.055	142	2500	41.08	541	38.04	33.97	5.20	4768	13.47	10.20	10.87	10.25	8.88
8010 Powershift	1446	Die.	13185	555	6	3.875x4.25	301	2300	107.38	1000	109.55	93.01	6.16	9102	15.01	11.49	12.57	11.48	9.54
8030 Powershift	1447	Die.	17100	2085	6	4.25x5.00	426	2300	133.75	1000	134.42	116.65	6.35	13348	15.25	11.78	12.93	11.87	10.00
8050 Powershift	1448	Die.	19380	4075	6	4.25x5.00	426	2300	152.40	1000	155.13	134.13	4.89	16728	15.88	12.51	13.71	12.73	10.80
8070 Powershift	1449	Die.	22370	5520	6	4.25x5.00	426	2400	170.72	1000	171.44	147.29	5.87	18777	16.48	12.81	13.67	12.59	10.64
Belarus																			
420A/400A	1638	Die.	8665	1140	4	4.134x4.724	254	1800	50.68	540	50.68	44.91	3.83	7435	16.30	13.62	14.06	13.56	11.77
570/572	1655	Die.	10426	1280	4	4.331x4.921	290	1800	61.24	540	59.41	55.09	5.39	9321	17.53	14.93	15.11	14.78	12.92
622/820	1640	Die.	11075	1765	4	4.331x4.921	290	2200	75.15	540	71.71	64.27	5.54	9973	16.99	14.27	14.53	13.98	12.29
1770	1641	Die.	20490	905	6	5.118x4.528	558	2100	167.60	1000	171.27	151.30	5.69	18440	16.81	13.55	14.58	13.25	11.68
Case																			
1594 Synchro	1546	Die.	11100	1755	6	3.939x4.500	329	2300	85.90	1000	80.83	73.54	5.29	8331	17.04	14.04	14.26	13.56	11.99
1594 Powershift	1547	Die.	11210	1745	6	3.939x4.500	329	2300	85.54	1000	81.94	70.59	5.47	8198	16.86	13.52	13.59	13.10	11.45
1896 Powershift	1548	Die.	13925	430	6	4.016x4.724	359	2100	95.92	997	95.92	86.65	4.77	12357	16.71	12.94	14.82	13.65	11.34
2094 Powershift	1525	Die.	14750	560	6	4.625x5.000	504	2100	110.50	998	110.50	100.12	6.34	11910	15.40	12.26	13.81	12.93	11.27
2096 Powershift	1549	Die.	14940	760	6	4.016x4.724	359	2100	115.67	998	115.67	101.40	6.37	12915	17.38	14.01	15.21	13.92	11.95
2294 Powershift	1526	Die.	15670	1280	6	4.625x5.000	504	2100	131.97	998	131.97	116.38	6.31	13017	14.86	11.82	13.11	12.21	10.51
2394 Powershift	1527	Die.	18595	2355	6	4.625x5.000	504	2100	162.15	1002	162.15	142.07	5.53	15497	15.46	12.70	13.42	12.71	11.04
2594 Powershift	1529	Die.	19790	3570	6	4.625x5.000	504	2100	182.07	1002	182.07	161.96	6.40	16874	15.22	12.88	13.37	12.94	11.63
3294 Powershift	1528	Die.	17980	0	6	4.625x5.000	504	2100	162.63	998	162.63	143.68	5.75	16242	15.32	12.58	13.55	12.76	11.13
4994 Powershift	1530	Die.	39930	8615	8	5.00x5.51	866	2100	344.04	991	344.04	306.43	7.20	34519	17.03	13.81	14.67	13.87	12.18
Case IH																			
685	1604	Die.	8845	3010	4	3.875x5.06	239	2400	61.02	540	58.80	54.63	5.42	7207	14.76	11.56	12.66	11.86	9.95
2394 Powershift	1582	Die.	18630	2230	6	4.625x5.00	504	2100	162.92	1002	162.92	148.98	5.12	17425	15.81	13.02	14.36	13.56	11.89
3394 Powershift	1583	Die.	18610	2810	6	4.625x5.00	504	2100	162.86	1002	162.86	144.82	5.08	17421	15.39	12.59	13.51	12.48	10.55
3594 Powershift	1584	Die.	20500	2910	6	4.625x5.00	504	2100	182.27	1002	182.27	165.12	5.07	20384	15.46	13.05	13.70	12.91	11.20
John Deere																			
750 8 Speed	1504	Die.	2150	155	3	3.15x3.35	78.2	2400	18.54	540	19.80	15.73	6.41	1661	15.06	11.61	12.48	11.53	9.83
1250	1437	Die.	5180	90	3	3.74x4.33	143	2500	40.70	540	40.98	34.01	5.39	3750	17.00	13.56	13.90	13.71	10.68
1450 9 Speed	1505	Die.	6570	1340	4	3.74x4.33	190	2400	51.39	540	50.93	43.79	7.68	5321	17.60	14.01	14.74	13.67	11.64
1650 9 Speed	1506	Die.	7785	2435	4	3.74x4.33	190	2300	62.23	540	62.70	54.06	7.79	6572	18.81	15.53	15.96	14.97	12.95
2150 16 Speed	1469	Die.	5930	820	3	4.19x4.33	179	2500	46.47	540	46.13	38.69	6.98	4875	14.77	11.15	11.88	11.24	9.47
2350 16 Speed	1470	Die.	7190	360	4	4.19x4.33	239	2500	56.18	540	55.69	47.53	6.77	5688	15.67	11.66	12.96	11.87	9.87
2550 16 Speed	1471	Die.	8485	1575	4	4.19x4.33	239	2500	65.94	540	65.53	56.24	6.22	6979	15.42	11.85	12.83	12.09	10.10
2750 16 Speed	1472	Die.	9625	2125	4	4.19x4.33	239	2500	75.35	540	75.07	63.98	4.75	7581	16.11	12.29	13.13	12.37	10.51
2755	1605	Die.	9715	1170	4	4.19x4.33	239	2300	76.57	1000	77.63	66.05	5.18	7498	17.82	14.04	14.67	14.19	12.14
2950 16 Speed	1473	Die.	11045	945	6	4.19x4.33	359	2500	85.17	1000	85.50	73.30	6.57	8768	16.33	12.21	13.58	12.45	10.53
2955	1606	Die.	11150	130	6	4.19x4.33	359	2300	86.22	1000	85.54	74.20	5.42	9971	17.41	13.63	14.82	13.79	11.64
3150 (3155)	1589	Die.	12300	355	6	4.19x4.33	359	2400	96.06	997	96.06	83.04	5.64	10507	16.45	13.09	14.23	13.34	11.21
4050 Quad	1474	Die.	13005	835	6	4.57x4.75	466	2200	101.49	1002	101.49	92.05	6.49	10331	15.12	11.72	13.44	12.54	10.64
4050 Quadrange	1590	Die.	13670	1280	6	4.19x4.33	359	2200	105.89	1003	105.89	96.35	5.86	11381	17.23	13.60	15.34	14.25	12.13
4050 Powershift	1457	Die.	13030	310	6	4.57x4.75	466	2200	100.95	1002	100.95	88.75	7.88	11056	15.08	11.59	12.60	11.69	9.65
4050 Powershift	1591	Die.	13685	1000	6	4.19x4.33	359	2200	105.69	1003	105.69	91.64	8.51	11378	17.40	13.78	14.61	13.47	10.99
4250 Quad	1475	Die.	14990	1620	6	4.57x4.75	466	2200	120.21	1002	120.21	108.77	5.71	12858	15.70	12.21	13.90	12.82	10.64
4250 Powershift	1458	Die.	14970	1115	6	4.57x4.75	466	2200	120.86	1002	120.86	105.11	8.36	12802	15.78	12.33	13.44	12.08	10.17
4450 Quad	1476	Die.	16680	2380	6	4.57x4.75	466	2200	140.33	1002	140.33	125.18	5.01	15069	16.36	13.08	14.42	13.45	11.61
4450 Quad (1)	1476	Die.	16760	2005	6	4.57x4.75	466	2200	140.33	1002	140.33	126.34	5.37	16278	16.36	13.08	14.68	—	—
4450 Powershift	1459	Die.	16745	1795	6	4.57x4.75	466	2200	140.43	1002	140.43	121.94	8.03	15014	16.15	12.94	13.63	12.58	10.60

Ten-Year Summary of Test Reports, 1982-1991

MAKE AND MODEL OF TRACTOR	Test No.	Fuel Used	Weight With Ballast	Lbs. Ballast Carried	ENGINE No. of Cylinders	ENGINE Bore and Stroke	ENGINE Displacement Cu. in.	ENGINE Rated RPM	Max. PTO HP at Rated Engine RPM	Std. PTO RPM	Max. PTO HP Std. PTO RPM	Max. Drawbar HP	MPH at Max. Dwbr. HP	Max. Lbs. Pull	FUEL CONSUMPTION (HP Hours Per Gallon) at:- Max. PTO HP at Std. PTO RPM	PTO Average at Varying Power	—Varing Drawbar Power— Max. Available Power	75% of Pull Max. Power	50% of Pull at Max. Power
Steiger																			
Panther KP 1360																			
12 Speed	1456	Die.	39570	4090	6	5.50x6.00	855	2100	326.12	1002	326.12	291.14	6.92	36771	17.39	14.15	15.45	14.27	12.15
Panther KP 1400																			
12 Speed	1463	Die.	43175	6640	6	5.50x6.00	855	2100				333.18	4.82	40803			15.87	14.54	12.10
(1) SN: 104.00331 and higher																			
Valmet																			
980 4x4	1599	Die.	13265	5000	4	4.01x4.72	239	2300	88.01	540	80.55	78.04	6.71	10722	18.23	13.14	14.35	13.19	11.26
148 4x4	1600	Die.	16830	5920	6	4.01x4.72	359	2300	126.89	1000	127.11	110.09	4.94	13574	16.92	13.63	14.29	13.29	11.71
Versatile																			
256 Hydrostatic	1518	Die.	10460	1310	4	4.02x4.72	239	2500	84.36	540	85.08	62.81	5.49	9134	16.45	12.67	11.82	11.07	9.52
276 Hydrostatic	1565	Die.	10510	1310	4	4.02x4.72	239	2500	100.22	540	102.14	70.91	5.61	7892	16.50	12.86	11.37	10.25	8.63
835 Series 3 12 Speed	1482	Die.	27980	3595	6	5.50x6.00	855	2100	200.30	1009	200.30	181.14	5.34	25687	15.82	11.86	14.45	12.74	10.45
836 Manual	1566	Die.	25960	1300	6	4.921x5.354	611	2100	192.54	1008	192.54	170.56	4.83	24123	17.71	13.80	15.59	14.11	11.99
836 Powershift	1567	Die.	25995	1535	6	4.921x5.354	611	2100	181.04	997	181.04	161.45	6.77	24723	16.65	12.56	14.80	13.34	11.24
856 Powershift	1568	Die.	28000	2920	6	4.921x5.354	611	2100	209.28	997	209.28	185.04	5.88	26479	17.24	13.22	15.35	13.59	11.40
875 Series 3 12 Speed	1483	Die.	29500	3870	6	5.50x6.00	855	2100	252.67	1008	252.67	227.48	5.65	26725	16.82	13.06	15.25	13.73	11.82
876 Manual	1569	Die.	29500	4540	6	4.921x5.354	611	2100				233.92	6.53	27703			16.85	15.68	13.65
936 Manual	1570	Die.	32385	5260	6	5.50x6.00	855	2100				260.45	6.78	29495			15.47	14.04	12.09
1150 8 Speed	1462	Die.	46500	11360	6	6.25x6.25	1150	2100				400.29	5.92	43219			15.84	14.64	12.35
White																			
2 55 16 Speed	1466	Die.	7055	860	4	4.02x3.94	199.4	2200	53.32	540	45.74	48.49	4.88	5037	14.89	12.38	13.35	13.21	11.39
2 65 16 Speed	1467	Die.	7110	790	4	4.02x4.65	235	2200	62.50	540	55.40	56.67	6.51	4827	16.19	12.91	13.94	13.20	11.29
2 75 16 Speed	1486	Die.	9625	1705	6	4.016x4.33	329	2200	75.39	1000	75.64	65.05	6.04	6487	15.86	12.02	13.01	12.21	10.48
2 88 18 Speed	1487	Die.	13615	0	6	3.875x5.00	354	2200	86.78	1007	86.78	74.67	6.51	9486	15.71	12.69	13.62	12.74	10.79
60 18 Speed	1636	Die.	8855	315	4	4.02x4.72	239	2200	61.07	540	61.61	52.39	3.88	7762	14.80	11.83	12.48	11.93	9.84
80 18 Speed	1637	Die.	11340	1990	4	4.02x4.72	239	2200	81.48	994	81.48	71.01	3.83	10091	16.83	13.37	14.04	13.15	11.09
100	1614	Die.	14485	545	6	4.02x4.72	359	2400	94.36	1000	93.48	82.57	5.97	13629	14.97	11.86	12.77	11.88	10.15
2 110 18 Speed	1468	Die.	13955	0	6	3.875x5.00	354	2200	110.52	1007	110.52	94.90	6.40	9500	16.77	13.27	14.19	13.08	10.84
120 (125)	1615	Die.	15315	850	6	4.02x4.72	359	2200	119.13	1000	121.94	104.69	6.62	14286	16.94	13.11	14.76	13.57	11.49
140 (145)	1616	Die.	15665	1000	6	4.02x4.72	359	2200	138.53	1000	140.30	125.01	6.17	15060	17.49	14.29	15.39	14.58	12.62
160 (170)	1607	Die.	18850	1560	6	4.49x5.32	504.5	2200	162.47	1000	165.97	142.74	6.24	18055	17.78	14.36	15.45	14.34	12.29
185 (190)	1608	Die.	18770	1620	6	4.49x5.32	504.5	2200	187.55	1000	192.38	167.72	6.18	18318	17.35	14.19	15.21	14.34	12.40
4 225	1558	Die.	24140	0	8	4.50x5.00	636	2600	195.65	1002	195.65	170.57	5.47	22865	15.60	12.06	13.64	12.42	10.44
4 270	1559	Die.	30650	0	6	4.75x6.00	638	2100	239.25	1000	242.30	211.70	6.60	27180	16.69	13.60	14.53	13.53	11.90
Yanmar																			
YM226D	1442	Die.	3380	1080	3	2.95x3.35	68.7	2600	19.42	540	17.87	16.14	4.78	2073	15.07	11.67	11.92	10.93	9.26
YM276D	1443	Die.	4110	1405	3	3.31x3.35	86.2	2600	23.00	540	22.82	18.93	5.78	2412	14.35	11.06	11.08	10.57	8.90
YM336D	1444	Die.	5020	1615	3	3.31x3.54	91.3	2600	26.98	540	25.63	23.00	6.28	3086	14.27	11.32	11.39	10.66	9.64
Zetor																			
5245/5211	1571	Die.	7295	385	3	4.02x4.33	164.6	2200	42.51	540	40.10	38.44	5.79	5955	16.56	13.17	14.59	13.83	12.10
6245/6211	1601	Die.	8535	885	4	3.94x4.33	211	2200	53.09	540	50.23	47.43	5.57	6332	16.06	13.04	13.84	13.34	11.50
7245/7211	1572	Die.	8565	725	4	4.02x4.33	219	2200	58.28	540	54.91	52.52	5.95	6356	16.82	13.51	14.36	13.90	12.33
7745/7711	1602	Die.	10360	2455	4	4.02x4.72	239	2200	65.74	540	62.17	57.56	6.63	7484	17.01	13.94	14.30	13.72	12.05

Ten-Year Summary of Test Reports, 1982-1991

MAKE AND MODEL OF TRACTOR	Test No.	Fuel Used	Weight With Ballast	Lbs. Ballast Carried	ENGINE No. of Cylinders	ENGINE Bore and Stroke	ENGINE Displacement Cu. in.	ENGINE Rated RPM	Max. PTO HP at Rated Engine RPM	Std. PTO RPM	Max. PTO HP Std. PTO RPM	Max. Drawbar HP	MPH at Max. Dwbr. HP	Max. Lbs. Pull	FUEL CONSUMPTION (HP Hours Per Gallon) at:- Max. PTO HP at Std. PTO RPM	PTO Average at Varying Power	—Varing Drawbar Power— Max. Available Power	75% of Pull Max. Power	50% of Pull at Max. Power
John Deere																			
4450 Powershift (1)	1459	Die	16625	1225	6	4.57x4.75	466	2200	140.43	1002	140.43	122.51	8.58	16154	16.15	12.94	13.66	...	...
4650 Quad	1477	Die	19615	1615	6	4.57x4.75	466	2200	165.70	998	165.70	145.58	6.45	16814	16.99	13.90	14.80	13.81	12.11
4650 Quad (1)	1477	Die	19590	1150	6	4.57x4.75	466	2200	165.70	998	165.70	147.71	5.73	18931	16.99	13.90	14.93	...	...
4650 Powershift	1460	Die	19660	1075	6	4.57x4.75	466	2200	165.52	998	165.52	143.33	8.12	16746	16.96	13.78	14.25	13.15	11.31
4650 Powershift (1)	1460	Die	19740	695	6	4.57x4.75	466	2200	165.52	998	165.52	146.06	8.47	18794	16.96	13.78	14.44	...	...
4850 Powershift	1461	Die	21435	2715	6	4.57x4.75	466	2200	192.99	998	192.99	171.27	8.04	18789	17.47	14.50	14.68	13.80	12.01
4850 Powershift (1)	1461	Die	21440	2280	6	4.57x4.75	466	2200	192.99	998	192.99	172.60	4.26	20810	17.47	14.50	14.93	...	...
8450	1436	Die	29150	0	6	4.57x4.75	466	2100	186.98	993	186.98	175.73	4.50	26567	15.69	12.91	14.45	13.53	11.63
8650	1435	Die	30270	0	6	5.125x5.00	619	2100	238.56	993	238.56	221.80	5.55	28257	15.53	12.65	14.26	13.22	11.52
8850	1434	Die	37700	0	8	5.51x5.00	955	2100	303.99	996	303.99	274.25	5.23	35330	15.74	12.82	14.06	13.34	11.65
(1) Supplementary test with radial ply tires.																			
Deutz Allis																			
6260	1574	Die	8790	1530	3	4.02x4.92	187	2500	57.09	540	55.35	50.73	4.60	7270	15.47	13.20	12.95	13.46	11.63
7085	1575	Die	13660	3580	4	4.02x4.92	249	2300	85.18	1000	84.35	75.13	7.56	10502	16.89	14.03	14.40	13.76	12.00
7120	1576	Die	17595	5465	6	4.02x4.92	374	2300	122.06	1000	123.15	105.49	5.06	13633	17.15	13.63	14.20	12.98	11.36
9150	1633	Die	18625	2710	6	4.016x4.921	374	2400	151.07	1000	150.22	135.28	5.14	17334	16.47	13.26	14.53	13.36	11.44
9170	1634	Die	21480	4015	6	4.921x5.118	584	2300	173.37	1000	178.70	158.66	4.93	19027	16.71	12.49	13.99	12.74	10.72
9190	1635	Die	19150	450	6	4.921x5.118	584	2300	193.55	1000	196.96	17...		18970	16.38	11.92	13.57	12.20	10.27
Deutz Fahr																			
DX 3.50	1574	Die	8790	1530	3	4.02x4.92	187	2500	57.09	540	55.35	50.73	4.60	7270	15.47	13.20	12.95	13.46	11.63
DX 4.70	1575	Die	13660	3580	4	4.02x4.92	249	2300	85.18	1000	84.35	75.13	7.56	10502	16.89	14.03	14.40	13.76	12.00
DX 6.50	1576	Die	17595	5465	6	4.02x4.92	374	2300	122.06	1000	123.15	105.49	5.06	13633	17.15	13.63	14.20	12.98	11.36
Ford																			
1510 (12x4) Manual	1500	Die	3205	975	3	3.03x3.15	68.2	2800	19.72	540	20.45	16.99	6.92	1952	13.21	10.32	11.14	10.26	8.50
1510 (12x4) Synchro	1501	Die	3200	915	3	3.03x3.15	68.2	2800	19.98	540	18.68	16.83	6.70	1900	13.50	10.29	10.97	10.27	8.57
1710 (12x4) Manual	1502	Die	3510	1040	3	3.31x3.31	85.2	2700	23.88	540	22.19	21.02	7.06	2700	13.42	10.16	11.36	10.76	8.98
1710 (12x4) Synchro	1503	Die	3530	1060	3	3.31x3.31	85.2	2700	23.79	540	22.34	21.23	5.68	2680	13.18	9.92	11.04	10.56	8.81
1910 (12x4) Manual	1507	Die	4250	1270	3	3.346x3.937	103.9	2500	28.60	540	28.29	25.57	6.78	3340	12.94	10.32	11.14	10.86	9.17
1910 (12x4) Synchro	1508	Die	4325	1285	3	3.346x3.937	103.9	2500	28.52	540	28.30	25.62	6.79	3449	12.48	10.36	10.99	10.78	9.09
2110 (12x4) Manual	1509	Die	5105	1470	4	3.346x3.937	138.5	2500	34.79	540	34.91	30.80	7.01	3868	14.01	10.69	11.80	10.95	9.04
2110 (12x4) Synchro	1510	Die	5110	1450	4	3.346x3.937	138.5	2500	35.11	540	35.56	31.11	6.99	3728	14.01	10.71	11.77	11.11	9.35
2610 (8x2)	1421	Die	5940	1780	3	4.20x4.20	175	2000	36.69	540	35.14	31.45	5.52	4473	16.15	12.82	13.03	12.71	10.51
2810 (8x2)	1573	Die	5935	1295	3	4.20x3.80	158	2000	32.83	540	31.82	29.14	5.88	4036	15.20	11.57	12.88	11.99	9.96
2910 (8x2)	1491	Die	5925	1295	3	4.20x4.20	175	2000	36.62	540	35.09	30.45	5.77	4237	16.04	12.51	13.18	12.31	10.49
2910 (8x4)	1492	Die	5955	1305	3	4.20x4.20	175	2000	36.40	540	34.75	31.03	5.68	4223	15.95	12.58	13.00	12.24	10.59
3610 (8x2)	1422	Die	6340	2070	3	4.40x4.20	192	2000	42.26	540	40.17	36.80	5.85	4964	15.95	12.65	13.37	12.69	11.20
3610 (8x4)	1423	Die	6340	2045	3	4.40x4.20	192	2000	42.47	540	40.01	35.57	8.55	4917	16.26	12.94	12.85	12.44	10.53
3910 (8x2)	1493	Die	6440	1760	3	4.40x4.20	192	2000	42.62	540	40.39	37.02	5.93	4931	15.86	12.48	13.33	12.66	10.71
3910 (8x4)	1494	Die	6435	1735	3	4.40x4.20	192	2000	42.67	540	41.16	36.22	5.85	4934	15.64	12.63	13.16	12.34	10.59
4110 (8x2)	1424	Die	7500	2850	3	4.40x4.40	201	2200	48.33	540	42.65	41.25	4.51	5681	16.37	12.64	13.26	12.34	10.76
4110 (8x4)	1425	Die	7500	2785	3	4.40x4.40	201	2200	49.26	540	44.06	40.59	4.92	5691	16.06	12.32	12.92	12.13	10.44
4610 (8x2)	1426	Die	8190	3095	3	4.40x4.40	201	2200	52.52	540	46.72	44.51	5.17	6402	16.78	13.17	13.96	13.25	11.60
4610 (8x4)	1427	Die	8230	3085	3	4.40x4.40	201	2200	52.32	540	47.30	43.26	5.62	6534	16.83	13.05	13.53	12.77	11.18
5610 (16x4)	1428	Die	9700	2325	4	4.40x4.20	256	2100	62.54	540	60.58	54.63	5.69	7408	15.57	12.38	12.82	12.44	10.30
5610 (16x8)	1429	Die	9545	3130	4	4.40x4.20	256	2100	62.57	540	59.99	53.70	6.57	7578	15.45	12.11	12.93	12.03	10.09
6610 (16x4)	1430	Die	9700	2270	4	4.40x4.40	268	2100	72.13	540	68.27	61.17	5.62	7887	15.64	13.14	13.40	12.90	10.77
6610 (16x8)	1431	Die	9700	2850	4	4.40x4.40	268	2100	72.30	540	69.20	62.64	6.49	7948	15.43	12.91	13.18	12.84	10.87
7610 (16x4)	1432	Die	10800	2220	4	4.40x4.40	268	2100	86.95	1000	86.79	74.22	5.53	8804	15.75	12.44	13.36	12.29	10.35

Ten-Year Summary of Test Reports, 1982-1991

MAKE AND MODEL OF TRACTOR	Test No.	Fuel Used	Weight With Ballast	Lbs. Ballast Carried	ENGINE No. of Cylinders	ENGINE Bore and Stroke	ENGINE Displacement Cu. in.	ENGINE Rated RPM	Max. PTO HP at Rated Engine RPM	Std. PTO RPM	Max. PTO HP Std. PTO RPM	Max. Drawbar HP	MPH at Max. Dwbr. HP	Max. Lbs. Pull	FUEL CONSUMPTION (HP Hours Per Gallon) at:- Max. PTO HP at Std. PTO RPM	PTO Average at Varying Power	—Varing Drawbar Power— Max. Available Power	75% of Pull Max. Power	50% of Pull at Max. Power
Ford																			
7710 (16x8)	1433	Die.	10800	2150	4	4.40x4.40	268	2100	86.62	1000	86.55	73.24	6.42	8638	15.87	12.60	13.67	12.26	10.35
TW 5	1514	Die.	14430	1340	6	4.40x4.40	401	2300	105.74	1000	96.83	95.27	8.52	12249	15.52	12.42	13.14	12.91	11.38
TW 15	1515	Die.	16010	2755	6	4.40x4.40	401	2200	121.40	1000	117.83	107.24	8.09	13247	16.90	12.39	13.83	12.80	10.88
TW 15 FWD (1)	1536	Die.	16680	2310	6	4.40x4.40	401	2200	121.25	1000	115.58	107.35	5.21	15939	16.95	12.39	13.96	12.65	10.68
TW 25	1516	Die.	17965	2530	6	4.40x4.40	401	2200	140.68	1000	135.70	126.73	5.25	14871	16.66	12.58	13.89	13.02	11.20
TW 35	1517	Die.	20270	4090	6	4.40x4.40	401	2200	170.30	1000	166.67	147.49	5.30	17054	17.41	13.81	14.31	13.91	12.18
TW 35 FWD (1)	1537	Die.	20270	3130	6	4.40x4.40	401	2200	171.12	1000	162.55	147.55	5.44	18823	17.58	14.09	14.42	13.71	12.04
(1) Drawbar test with front wheel assist engaged.																			
Hesston Fiat																			
466 12 Speed	1484	Die.	6670	950	3	3.94x4.33	158	2600	45.13	540	42.68	40.03	5.79	4969	16.74	12.41	13.66	12.87	10.95
45 66 DT	1579	Die.	5400	950	3	3.937x4.528	165	2500	39.49	540	37.97	31.74	4.68	4257	16.65	12.11	12.36	11.23	9.46
55 66 DT	1560	Die.	6570	1105	3	3.037x4.528	165	2500	45.78	540	44.84	38.74	5.64	4608	16.36	12.77	12.98	12.80	11.27
60 66 DT	1531	Die.	7460	1580	3	4.094x4.527	178.8	2500	51.49	540	48.51	45.51	5.53	5515	17.13	13.11	14.19	13.30	11.38
70 66 DT	1561	Die.	8705	2015	4	3.937x4.528	220.5	2500	62.72	1000	62.71	54.83	5.69	8320	17.20	13.67	14.64	13.61	11.54
70 90	1562	Die.	7775	490	4	3.937x4.527	220.5	2500	62.25	1000	61.94	54.64	5.62	6238	16.52	13.28	14.04	13.46	11.82
80 90	1563	Die.	9465	2155	4	4.094x4.527	238.5	2500	70.86	1000	69.25	61.52	5.56	7323	17.43	13.96	14.76	14.09	12.28
100 90	1580	Die.	11580	1860	6	3.937x4.527	331	2500	91.52	1000	90.57	78.72	6.35	9911	16.24	12.93	13.62	12.76	10.68
666 12 Speed	1485	Die.	8715	2425	4	3.937x4.33	211	2500	62.40	540	60.33	54.31	5.51	6611	17.00	13.00	13.79	13.20	11.73
80 66 DT	1532	Die.	9400	2685	4	4.094x4.527	238.5	2500	70.43	1000	68.91	62.73	5.47	7245	17.22	14.08	14.96	14.21	12.66
1180 DT Turbo	1450	Die.	16885	1935	6	4.055x4.33	335	2550	107.48	1000	104.22	93.71	4.37	12905	16.40	12.54	14.16	12.74	10.42
130 90 DT Turbo	1564	Die.	16385	660	6	4.094x4.527	358	2500	107.48	1000	106.80	91.59	4.67	14850	16.43	12.07	13.83	12.17	9.85
140 90 DT Turbo	1533	Die.	16425	375	6	4.094x4.527	358	2500	123.35	1000	122.83	105.81	5.05	12687	17.12	13.04	14.40	13.16	11.13
1580 DT Turbo	1451	Die.	19060	2460	6	4.528x5.118	494	2200	141.44	1000	136.14	124.15	5.48	15342	17.28	13.49	14.70	13.53	11.47
160 90 DT Turbo	1534	Die.	18370	1075	6	4.528x5.118	494	2200	141.71	1000	143.91	122.23	5.32	13848	17.53	13.61	14.38	13.62	11.84
160 90 Powershift	1603	Die.	18220	300	6	4.528x5.118	494	2200	142.64	1000	141.40	126.34	4.44	18256	16.69	12.96	13.92	12.93	11.10
180 90 DT Turbo	1535	Die.	19725	2430	6	4.528x5.118	494	2200	162.87	1000	158.66	140.45	6.40	14713	17.86	14.13	14.82	14.25	12.29
180 90 Turbo P.S.	1581	Die.	19570	1745	6	4.528x5.118	494	2200	162.15	1000	161.07	143.02	4.43	19734	16.77	13.07	14.03	13.30	11.06
International Harvester																			
3088 16 Speed	1551	Die.	12500	560	6	3.875x5.062	358	2400	81.35	1000	80.28	71.20	5.16	10995	16.03	11.36	12.84	11.59	9.76
3288	1438	Die.	13560	1800	6	3.875x5.062	358	2400	90.46	1000	88.33	80.72	6.11	11486	15.94	11.69	13.16	12.31	10.27
3488 Hydro	1439	Die.	13940	1060	6	4.30x5.35	466	2400	112.56	1000	107.11	83.43	6.50	12152	15.28	10.64	10.00	9.73	8.43
3688	1440	Die.	14335	1135	6	4.30x5.00	436	2400	113.72	1000	112.48	100.28	7.36	12250	15.75	11.82	13.30	12.35	10.38
5488	1441	Die.	20005	2765	6	4.30x5.35	466	2400	187.22	1005	187.22	164.82	5.27	18646	16.20	13.00	14.16	13.15	11.21
Kubota																			
L2250 4WD	1585	Die.	3130	530	3	3.23x3.23	79.3	2600	21.15	540	21.45	17.28	5.04	2103	17.18	13.38	13.46	12.36	10.67
L2550 4WD	1586	Die.	3850	1100	3	3.35x3.23	85.1	2600	23.98	541	24.24	20.23	5.22	2446	16.52	13.37	13.27	12.39	10.55
L2850 4WD	1587	Die.	4580	1615	4	3.23x3.23	105.7	2600	27.51	540	27.96	24.02	5.02	3143	16.98	13.07	13.49	12.68	10.92
L3350 4WD	1588	Die.	5340	1155	4	3.35x3.23	113.6	2600	32.86	540	33.29	27.49	4.92	3434	17.13	13.52	13.32	12.78	11.08
L3750 4WD	1555	Die.	5945	1530	5	3.35x3.23	142	2500	36.96	540	36.81	30.69	4.96	3641	17.32	13.32	13.29	12.49	10.69
L4150 4WD	1556	Die.	6365	1840	5	3.35x3.23	142	2600	40.64	540	40.22	34.50	5.47	4257	17.12	13.24	13.14	12.81	11.07
M4030 DT	1594	Die.	7375	2415	6	3.23x3.23	158.5	2600	44.05	540	44.08	36.91	6.02	4005	17.19	13.48	13.80	12.92	11.16
M4050 DT and M4050 8 Speed	1495	Die.	7215	2275	6	3.23x3.23	158.5	2600	45.74	540	42.10	37.61	5.99	4259	15.06	11.57	11.67	11.52	9.88
M4950 DT & M4950 12 Speed	1496	Die.	8195	2395	6	3.35x3.23	170	2600	49.57	540	45.47	41.43	4.68	5292	14.70	11.21	11.49	11.15	9.26
M5030 DT	1595	Die.	8120	2985	6	3.35x3.23	170	2600	49.77	540	48.94	42.00	4.90	4592	17.28	13.58	13.72	13.34	11.67
M5950 DT & M5950 12 Speed	1497	Die.	9220	3100	3	4.29x4.53	196	2400	58.00	540	52.81	49.29	5.09	5749	17.08	13.44	13.64	13.53	11.83

Ten-Year Summary of Test Reports, 1982-1991

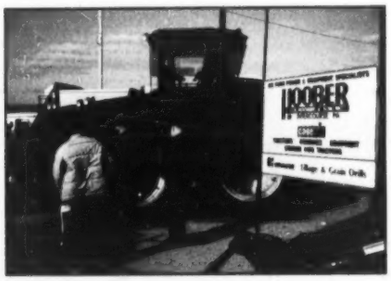
MAKE AND MODEL OF TRACTOR	Test No.	Fuel Used	Weight With Ballast	Lbs. Ballast Carried	ENGINE No. of Cylinders	Bore and Stroke	Displacement Cu. in.	Rated RPM	Max. PTO HP at Rated Engine RPM	Std. PTO RPM	Max. PTO HP Std. PTO RPM	Max. Drawbar HP	MPH at Max. Dwbr. HP	Max. Lbs. Pull	FUEL CONSUMPTION (HP Hours Per Gallon) at:- Max. PTO HP at Std. PTO RPM	PTO Average at Varying Power	—Varing Drawbar Power— Max. Available Power	75% of Pull Max. Power	50% of Pull at Max. Power
Kubota																			
M6030 DT	1596	Die	8970	3590	3	4.29x4.53	196	2400	57.74	540	53.57	48.11	5.54	5330	16.96	13.32	13.28	13.32	11.68
M6950 DT & M6950 12 Speed	1498	Die	9575	2530	4	4.13x4.53	243	2400	66.44	540	63.96	56.74	5.02	6517	16.98	13.26	13.72	13.28	11.33
M7030 DT	1597	Die	9405	3205	4	4.13x4.53	243	2400	68.87	540	64.38	58.49	5.23	5896	17.43	13.68	14.03	13.80	11.97
M7950 DT & M7950 12 Speed	1499	Die	10305	3205	4	4.29x4.53	262	2400	75.44	540	69.32	65.24	5.26	7244	17.14	13.57	13.88	13.82	11.93
M8030 DT	1598	Die	9970	3640	4	4.29x4.53	262	2400	76.91	540	70.47	64.37	6.97	6503	17.23	13.71	13.70	13.54	11.95
M8950 DT	1557	Die	12270	2540	4	4.29x4.53	262	2400	85.63	1005	85.63	71.13	7.53	7974	16.21	12.91	12.96	12.37	10.36
Massey Ferguson																			
MF240 8 Speed	1519	Die	4985	770	3	3.60x5.00	152	2000	34.77	540	31.89	29.39	5.30	3824	16.10	13.18	13.72	13.35	11.59
MF250 8 Speed	1520	Die	5760	1175	3	3.60x5.00	152	2250	40.86	540	36.93	35.07	5.81	4297	15.80	12.38	12.92	12.50	10.72
MF254 12 Speed	1478	Die	7275	1790	3	3.60x5.00	152	2250	43.36	540	40.71	35.14	5.82	3844	16.58	13.43	12.84	12.51	10.62
MF270 8 Speed	1521	Die	8195	1295	4	3.875x5.00	236	2000	55.85	540	52.75	47.08	4.96	5896	16.79	12.99	13.44	13.10	11.22
MF274 12 Speed	1479	Die	8190	2205	4	3.875x5.00	236	2200	55.39	540	54.26	46.76	6.56	4719	17.25	12.80	13.76	12.66	10.59
MF290 12 Speed	1522	Die	9070	3130	4	3.975x5.00	248	2200	65.92	540	59.37	56.36	6.44	7654	16.58	12.75	13.24	12.76	10.98
MF294 12 Speed	1480	Die	8645	1925	4	3.975x5.00	248	2100	67.39	540	64.94	56.28	5.77	5665	17.58	14.53	14.68	13.95	12.54
MF298 8 Speed	1523	Die	11040	3070	4	4.50x5.00	318	2000	79.54	1000	73.66	69.74	5.14	8712	16.31	12.88	13.47	13.14	11.55
MF298 12 Speed	1524	Die	10950	2935	4	4.50x5.00	318	2000	79.26	1000	74.25	67.85	7.73	8663	15.72	11.93	12.40	12.39	10.79
MF670 & 270 12 Speed	1538	Die	9200	480	4	3.875x5.00	236	2000	55.62	1000	51.44	46.05	4.87	6382	16.39	12.37	12.93	12.10	10.26
MF690 12 Speed	1539	Die	10295	2275	4	3.975x5.00	248	2200	65.68	540	62.25	54.78	4.77	7650	15.51	11.96	12.01	11.79	9.82
MF698 12 Speed	1540	Die	12125	2185	4	4.50x5.00	318	2000	78.83	540	74.41	68.38	4.56	8707	15.91	11.91	12.55	12.24	10.59
MF699 12 Speed	1541	Die	12935	2610	6	3.875x5.00	354	2200	85.79	540	78.00	71.71	4.69	8718	16.96	12.87	13.51	12.66	10.64
MF1020	1552	Die	2930	700	3	2.953x3.347	68.7	2350	17.08	540	16.24	14.59	5.01	1771	12.53	10.51	10.36	10.44	9.39
MF1030	1553	Die	3915	925	3	3.228x3.543	87	2500	23.35	540	22.80	18.66	5.70	2277	12.97	10.31	10.04	9.82	8.30
MF1040	1554	Die	4715	915	3	3.622x3.937	121.7	2500	27.73	540	25.80	22.57	5.52	2795	12.98	10.01	10.07	9.53	7.84
MF2640 15 Speed	1481	Die	16380	3945	6	3.875x5.00	354	2400	90.95	1000	87.60	74.83	6.58	10623	15.81	11.67	12.15	11.46	9.70
MF3505 16 Speed	1511	Die	13195	260	6	3.875x5.00	354	2400	91.50	1000	87.47	74.79	6.54	8344	15.53	11.40	11.55	10.90	9.19
MF3525 16 Speed	1512	Die	14645	1545	6	3.875x5.00	354	2400	108.01	1000	103.67	91.22	6.45	9322	16.67	11.65	12.65	11.53	9.31
MF3545 16 Speed	1513	Die	17235	3935	6	3.875x5.00	354	2400	126.72	1000	122.15	105.16	6.82	10563	17.01	12.11	12.86	11.47	9.64
Steiger																			
Bearcat 1000	1592	Die	28575	0	6	4.75x6.00	638	2100	218.00	1001	218.00	195.49	4.45	28566	16.61	13.41	14.68	13.57	11.60
Bearcat IV KM 225	1542	Die	33830	5430	6	4.921x5.354	611	2100	—	—	—	193.11	4.18	31556	—	—	16.43	15.28	13.12
Cougar 1000	1593	Die	31270	2820	6	4.75x6.00	638	2100	259.96	1001	259.96	230.18	6.59	30981	—	—	15.17	14.31	12.53
Cougar CR 1225	1577	Die	29190	0	6	4.75x6.00	638	2100	208.61	999	208.61	184.83	5.16	29570	16.46	13.29	14.40	13.46	11.44
Cougar CR 1280	1578	Die	29600	0	6	4.75x6.00	638	2100	258.15	999	258.15	231.19	5.19	28708	17.19	14.18	15.18	14.30	12.36
Cougar III ST 250(1)	1452	Die	29965	0	6	4.75x6.00	638	2100	—	—	—	215.98	6.11	29539	—	—	15.16	14.40	12.76
Panther IV KM 325	1543	Die	33715	3955	6	5.50x6.00	855	2100	—	—	—	285.67	6.78	32565	—	—	16.04	14.79	13.00
Panther IV CM 360	1544	Die	33740	3815	6	5.40x6.50	893	2100	—	—	—	324.84	6.73	32328	—	—	15.96	15.15	13.29
Panther IV SM 325	1550	Die	33930	5030	6	4.921x5.906	674	2100	—	—	—	278.09	6.78	33651	—	—	17.12	15.98	14.22
Panther CP 1325 12 Speed	1453	Die	35870	410	6	5.40x6.50	893	2100	299.10	1002	299.10	266.97	6.95	33802	16.55	13.59	14.71	13.86	11.95
Panther CP 1360 12 Speed	1455	Die	39120	3860	6	5.40x6.50	893	2100	334.33	1002	334.33	294.07	6.89	36123	16.75	13.78	14.60	13.81	11.85
Panther CP 1400 12 Speed	1464	Die	43615	7165	6	5.40x6.50	893	2100	—	—	—	334.94	8.17	40272	—	—	14.92	14.12	12.07
Panther KP 1325 12 Speed	1465	Die	35815	605	6	5.50x6.00	855	2100	301.21	1002	301.21	267.87	6.93	34267	17.38	13.97	15.58	14.15	11.84

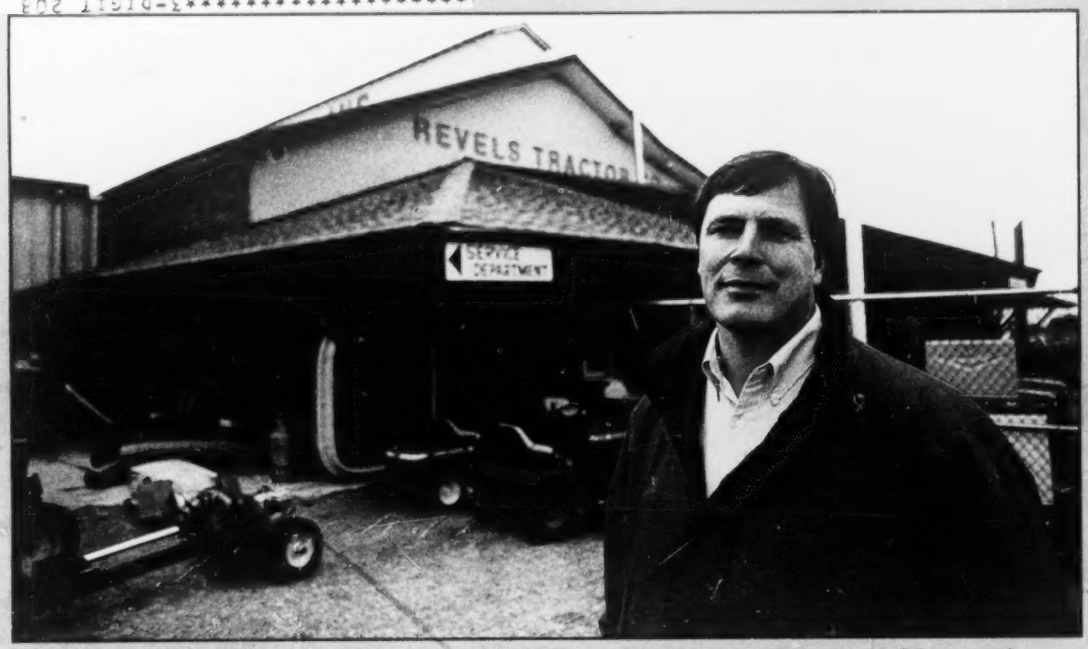
Gauging Interest At The Shows

IMPLEMENT & TRACTOR

ltural, Industrial & Outdoor Power Equipment Industry

APRIL/MAY 1992





SMALL EQUIPMENT has produced lasting stability for Turner Revels Jr., general manager of the ag-turf-consumer products dealership his father started as a chainsaw shop in 1961.

Diversity

Even When It Hurts

By JIM HUDSON

SOME DEALERS believe they must specialize in farm machinery, avoiding consumer products because farmers in a hurry for parts don't want to wait in line while some "city boy" buys a lawnmower blade.

That line of reasoning doesn't hold with Turner Revels Jr., general manager of a North Carolina John Deere dealership. The conflicts that arise from handling consumer products and Deere's professional turf line alongside the agricultural machinery have been solved, or at least reduced to

(See DIVERSITY, pg. 8)

AGCO Announces Further Expansion

By SCOTT NESBITT

While the market is muddling along, AGCO is staying busy.

In recent weeks, it has opened a new tractor assembly line, given White tractor dealers a new series of water-cooled, Italian-built utility tractors, created a water-cooled White combine line based on the Gleaner, and prepared a stock prospectus to let the public buy into the action.

AGCO President and CEO Robert J. Ratliff joined other company officials in unveiling the new White tractors and combines at the old Independence, Mo., plant where Gleaner combines are built.

The factory recently underwent a $2 million renovation to add a new production line and machining facilities for production of the large (120 to 195 pto hp) White Workhorse and Deutz-Allis 9100 series tractors. AGCO took over the product line last year from White-New Idea of Coldwater, Ohio.

Ratliff said improvements to Gleaner combine manufacturing systems, particularly just-in-time inventory control, freed up enough space to add the tractor operation without expanding the 500,000-square-foot plant. The new line is designed to permit quick response to dealer orders, rather than using the old system of building a long string

(See AGCO, pg. 14)

AGCO leader Robert J. Ratliff recently participated in the unveiling of a new series of water-cooled tractors to fill the middle of the White dealer lineup.

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EDITOR'S NOTEBOOK

As Sales Season Heats

Maneuvering In Industry Persists

By SCOTT NESBITT

MUSINGS ON the what and why of the farm and industrial industry as the selling season gets serious. A bit of editorial comment in italic follows some items, while others stand alone.

AGCO Finances Revealed

While AGCO has been buying and growing rapidly in the farm machinery business, the company's financial underpinnings have been kept out of the public eye, simply because it is a privately-held company.

But now AGCO joins the ranks of open-book companies, thanks to a prospectus issued in advance of the firm selling common stock, just like Deere & Co., Case-IH (through its Tenneco parent), Massey-Ferguson (through its Varity parent) and Gehl.

The AGCO prospectus, (issued March 10, with some elements still incomplete) shows the company had net sales in calendar year 1991 of $274 million, and a net income of $9.3 million. Those figures included sales and profits (or losses) on the Hesston and White Tractor product lines. The prospectus said that prior to the acquisitions of Hesston (on March 31, 1991) and White Tractor (on May 31, 1991), those two operations had net sales of $56 million, and showed a net loss of $2.3 million.

For those who like to examine price tags, the prospectus states that the Hesston was bought for about $27,825,000, of which $10,325,000 was paid from working capital and $17,500,000 from borrowed funds. The price of White Tractor was about $10,124,000, funded by a $5,000,000 cash payment in July, 1991 and a promissory note of $5,124,000, with a 12 percent interest rate, which was paid in November, 1991.

A reader can learn, for example, the distribution of AGCO in North America (79 Texas dealer contracts, 108 in Iowa, 3 in Mississippi and 8 in British Columbia). It is full of interesting facts: there are 603 dealers selling White tractors, of which 80 handle Hesston and 100 handle Deutz-Allis.

The document even lists the 1991 salaries of key AGCO executives and lays out their strategies for future growth. The financial houses handling the AGCO stock offering are The First Boston Corp. and Dillon, Read & Co., Inc. The prospectus, pending SEC approval, called for making the stock offer in April and listing it on the NASDAQ National Market System sometime this spring.

Comment: Next time someone asks "what price freedom?" show them a prospectus required by the U.S. Securities and Exchange Commission. The AGCO disclosure is almost embarrassingly complete. Revealing this much information to a competitor behind closed doors would probably be illegal. But since it's available for anyone to see, it's OK.

The prospectus is on the "must read' list of everyone in the farm machinery business, including the dealers who sell AGCO brands and their competition. If you believe in the old homilies of "know thyself" and "know thy enemy," ask your favorite stock broker to get you a copy. Then settle in for an enlightening look at an important new player in the business. □

* * * * *

Case Vibrates With Changes

The fax machines Tenneco uses to distribute news about JI Case may need to be replaced soon if the flurry of reports about the Big Red company and its parent keep up at the current pace. The new management atop Tenneco (at Houston, Texas) and Case-IH (in Racine, Wis.) was supposed to shake things up. They have.

Following is an update since the year began:

Jan. 22, 1992, Racine—JI Case restructures by dissolving the two primary business groups, Agricultural Equipment & Components and Construction Equipment & Parts. Support staffs are consolidated under the heads of North American sales and marketing, North American manufacturing and worldwide engineering.

Case chairman and CEO Robert J. Carlson says the simpler structure reduces administrative costs, streamlines the organization, improves customer service and response to market dynamics. It improves accountability and operational control.

The new management team comes mostly from outside the industry:

Edward J. Campbell, 64, came to Case early this year from Tenneco's profitable Newport News Shipbuilding and continues as president, reporting to Carlson.

Peter Menikoff, 51, came to Case last November from Tenneco's Houston base. He reports to Carlson as executive vice president for finance, audit, law, information services, real estate, corporate planning and development, and Case Credit Corp.

Richard M. Christman, 41, becomes senior vice president, sales and marketing for North America, and reports to Campbell. A Case employee since 1975, he was senior vice president over the parts division since 1989, and served in executive spots in European sales and marketing, North American ag retail enterprises, and various retail sales and marketing planning posts in both the ag and construction divisions.

Thomas E. Evans, 40, becomes senior vice president, manufacturing, for North America, and reports to Campbell. He came to Case in 1989 from Federal Mogul Corp., where he managed the seal and ball bearing operations. He also spent 14 years in engineering and manufacturing with Rockwell International.

Kenneth Q. Kessler, 60, becomes senior vice president for engineering worldwide, reporting to Campbell. He spent 34 years in Deere & Co. engineering management before joining Case in 1989, and has directed Case product development since September, 1991.

Theodore R. French, 37, becomes senior vice president and chief financial officer, reporting to Menikoff. He replaced Edward McFadden, who resigned. French spent 12 years with Rockwell International before joining Case in 1989.

Jan. 27, 1992, Racine—Case says it has reduced inventories on major products by 23 percent in 1991, bringing worldwide supplies to a level of about six months, a level Carlson called the industry norm.

The action drops inventories to a three-year low at dealers and a five-year low at the company. Counted as wholesale receivables, the cuts are valued at $750 million.

Cuts came by reducing 1991 production more than 20 percent from 1990 levels, and from "sales programs which resulted in stronger retail activity compared with industry averages."

Carlson says "both the production cuts and the sales programs came at a cost, but they were necessary to get the company on track to return

(See EDITOR'S, pg. 15)

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Editorial, advertising and circulation correspondence should be addressed to: P.O. Box 1420, Clarksdale, Mississippi 38614.
Telephone: 601/624-8503
Fax: 601/627-1977/1137

EDITORIAL
Scott Nesbitt, Editor
2120 W. 25th Street, Suite H
Lawrence, Kansas 66047-2954
Telephone: 913/841-7911
Fax: 913/749-0179

Hembree Brandon, Editorial Director
H. Scott McClure, Managing Editor

CIRCULATION
Send change of address forms and circulation inquiries to:
Implement & Tractor
P.O. Box 1420
Clarksdale, Mississippi 38614

ADVERTISING
Darrah Parker, Production Manager
P.O. Box 1420
Clarksdale, Mississippi 38614
Telephone: 601/624-8503

John Montandon, Publisher
2516 Via Tejon, Suite 216
Palos Verdes Estates, California 90274
Telephone: 310/373-0318
Fax: 310/375-0834

John Sims
114½ East Pearl Street
Granbury, Texas 76048
Telephone: 817/573-5731
Fax: 817/573-7051

Mike Gonitzke
307 Green Street #5
Gainesville, Georgia 30501
Telephone: 706/535-1593
Fax: 706/287-7205

Midwestern and Eastern Advertising Representative:
Thompson & Associates, Inc.
20 N. Wacker Dr., Suite 1221
Chicago, Illinois 60606
Telephone: 312/726-1020
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Stockwell/Midwest
1900 Erie, Suite 203
North Kansas City, Missouri 64116
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Fax: 816/741-1925
Ray Stockwell

Haruki Hirayama
EMS, Inc.
Room 801, Shinjuku Komuro Bldg.
4-1-22, Shinjuku, Shinjuku-Ku
Tokyo 160 Japan
Phone: (03) 350-5666
Cable: EMSINCPERIOO Tokyo
Telex: 2322520 EMSINC J

ADMINISTRATION
John L. Montandon, Publisher
David Whaley, General Manager

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INDUSTRY NEWS

Sales Tick Upward Early In Year

AFTER SHOWING double-digit dips in all U.S. sales categories for 1991, the Equipment Manufacturers Institute issued reports for January and February showing an upturn in the market for tractors, except for modest losses in 2WD tractors under 40 pto hp and in 4WD tractors. Combines dropped in February after surging upward in January.

North of the border, 1991 finished in the pits, but there were signs of life in the new year, according to reports from the Canadian Farm & Industrial Equipment Institute. Through the end of February, self-propelled combine market were up 63 percent, 2WD tractors over 100 pto hp were up about 24 percent, and 4WD tractors were up 11 percent. And for those seeking real signs of vitality, there was a 219 percent gain in sales of pull-type swathers. □

U.S. - UNIT RETAIL SALES

Equipment	December 1991	December 1990	% Change	January-December 1991	January-December 1990	% Change	November 1991 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	1,874	2,215	(15.4)	35,895	42,061	(14.7)	32,078
40 & Under 100 HP	2,225	2,863	(22.3)	33,891	38,421	(11.8)	21,777
100 HP & Over	2,128	3,569	(40.4)	20,119	22,791	(11.7)	14,089
Total 2-Wheel Drive	6,227	8,647	(28.0)	89,905	103,273	(12.9)	67,944
Total 4-Wheel Drive	386	433	(10.9)	4,069	5,102	(20.2)	2,482
Total Farm Wheel Tractors	6,613	9,080	(27.2)	93,974	108,375	(13.3)	70,426
Combines:							
(Self-Propelled)	880	1,081	(18.6)	9,715	10,433	(6.9)	5,253

U.S. - UNIT RETAIL SALES

Equipment	January & Year-To-Date 1992	January & Year-To-Date 1991	% Change	December 1991 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:				
2-Wheel Drive				
Under 40 HP	1,513	1,694	(10.7)	30,759
40 & Under 100 HP	2,304	1,918	20.1	21,771
100 HP & Over	1,925	1,208	59.4	13,249
Total 2-Wheel Drive	5,742	4,820	19.1	65,779
Total 4-Wheel Drive	199	171	16.4	2,085
Total Farm Wheel Tractors	5,941	4,991	19.0	67,864
Combines:				
(Self-Propelled)	593	645	8.1	4,903

U.S. - UNIT RETAIL SALES

Equipment	February 1992	February 1991	% Change	January-February 1992	January-February 1991	% Change	December 1991 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	1,586	1,495	6.1	3,099	3,189	(2.8)	30,759
40 & Under 100 HP	1,735	1,957	(11.3)	4,039	3,875	4.2	21,771
100 HP & Over	923	1,450	(36.3)	2,848	2,658	(7.1)	13,249
Total 2-Wheel Drive	4,244	4,902	(13.4)	9,986	9,722	2.7	65,779
Total 4-Wheel Drive	161	193	(16.6)	360	364	(1.1)	2,085
Total Farm Wheel Tractors	4,405	5,095	(13.5)	10,346	10,086	2.6	67,864
Combines:							
(Self-Propelled)	325	425	(23.5)	918	1,070	(14.2)	4,903

These data are, in part, estimates which are subject to revisions when final detail data become available. Because of the seasonal nature of the industry comparisons of monthly data from one period to another should be done with extreme caution. These data represent most, but not all, of the manufacturers in each product category being sold at retail in the fifty states and the District of Columbia.

*Due to the fact that the January 1992 actual numbers were not available, January Flash totals were used to compile year-to-date numbers.

Canada Report
Retail Sales In Units

EQUIPMENT	December 1991	December 1990	% Chg.	December/Ytd 1991	December/Ytd 1990	% Chg.
FARM WHEEL TRACTORS						
2WD under 40 H.P.	157	227	-30.8%	2,720	3,586	-24.1%
2WD 40-99 H.P.	621	851	-27.0%	5,864	7,227	-18.9%
2WD 100 H.P. & Over	274	318	-13.8%	2,526	2,594	-2.6%
Total 2WD	1,052	1,396	-24.6%	11,110	13,407	-17.1%
Total 4WD	138	98	40.8%	1,416	1,586	-10.7%
TOTAL FARM WHEEL TRACTORS:	1,190	1,494	-20.3%	12,526	14,993	-16.5%
COMBINES						
Self Propelled	89	84	-6.0%	1,508	1,411	6.9%
Pull Type	16	11	45.5%	128	185	-30.8%
BALERS						
Rectangular Balers	27	18	50.0%	760	1,162	-34.6%
Round Balers	99	103	-3.9%	3,259	3,731	-12.7%
SWATHERS						
Self Propelled	26	21	23.8%	719	745	-3.5%
Pull Type	23	26	-11.5%	714	1,183	-39.6%
FORAGE HARVESTERS						
Shear Bar Type	16	9	77.8%	462	522	-11.5%
MOWER CONDITIONERS	84	74	13.5%	2,978	3,352	-11.2%

Canada Report
Retail Sales In Units

EQUIPMENT	January 1992	January 1991	% Chg.	January/Ytd 1992	January/Ytd 1991	% Chg.
FARM WHEEL TRACTORS						
2WD under 40 H.P.	117	163	28.2%	117	163	28.2%
2WD 40-99 H.P.	308	360	14.4%	308	360	14.4%
2WD 100 H.P. & Over	185	126	-46.8%	185	126	-46.8%
Total 2WD	610	649	6.0%	610	649	6.0%
Total 4WD	72	70	2.9%	72	70	-2.9%
TOTAL FARM WHEEL TRACTORS:	682	719	5.1%	682	719	5.1%
COMBINES						
Self Propelled	89	42	-111.9%	89	42	-111.9%
Pull Type	3	1	-200.0%	3	1	-200.0%
BALERS						
Rectangular Balers	23	17	-35.3%	23	17	-35.3%
Round Balers	65	66	1.5%	65	66	1.5%
SWATHERS						
Self Propelled	12	10	-20.0%	12	10	-20.0%
Pull Type	25	16	-56.3%	25	16	-56.3%
FORAGE HARVESTERS						
Shear Bar Type	16	17	5.9%	16	17	5.9%
MOWER CONDITIONERS	84	71	-18.3%	84	71	-18.3%

Canada Report
Retail Sales In Units

EQUIPMENT	February 1992	February 1991	% Chg.	February/Ytd 1992	February/Ytd 1991	% Chg.
FARM WHEEL TRACTORS						
2WD under 40 H.P.	98	69	42.0%	215	232	-7.3%
2WD 40-99 H.P.	194	252	23.0%	502	612	-18.0%
2WD 100 H.P. & Over	100	104	-3.8%	285	230	23.9%
Total 2WD	392	425	7.8%	1,002	1,074	-6.7%
Total 4WD	48	38	26.3%	120	108	11.1%
TOTAL FARM WHEEL TRACTORS:	440	463	-5.0%	1,122	1,182	-5.1%
COMBINES						
Self Propelled	30	31	-3.2%	119	73	63.0%
Pull Type	1	3	-66.7%	4	4	0.0%
BALERS						
Rectangular Balers	19	30	-36.7%	42	47	-10.6%
Round Balers	63	67	-6.0%	128	133	-3.8%
SWATHERS						
Self Propelled	6	2	200.0%	18	12	50.0%
Pull Type	42	5	740.0%	67	21	219.0%
FORAGE HARVESTERS						
Shear Bar Type	14	22	-36.4%	30	39	-23.1%
MOWER CONDITIONERS	79	75	5.3%	163	146	11.6%

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MEETINGS...CONVENTIONS...SHOWS

IMPLEMENT & TRACTOR

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VOLUME 107, NO. 4 JUNE/JULY 1992

Briefs:

Cooper President of White-New Idea

Rodney Cooper has been appointed president of White-New Idea. The announcement was made May 20 by Bobby Middlebrooks, senior vice president of Allied Products Corporation. Allied is the parent company of White-New Idea.

COOPER

A graduate of Ohio University in Athens, Ohio, Cooper started his career with White-New Idea in 1974 as a territory manager. His experience with the company includes several sales management positions, including region manager. Cooper served as director of parts operations in Coldwater, Ohio, as well as his most recent position as vice president of sales and marketing.

Cooper replaces Charles Lunger, who has been interim president of White-New Idea since August, 1991. Lunger is returning to Allied's offices in Chicago to resume his full time responsibilities as chief operating officer. □

Belarus Machinery Has Strong First Quarter

While many large farm equipment manufacturers battle against a struggling farm economy and nationwide decline in orders for capital goods, Russian-owned Belarus Machinery Inc. (BMI) achieved a first-quarter sales growth of 210 percent over the same period last year.

BMI's sales outperformed the farm equipment industry as a whole, which showed a sales increase of 4.3 percent in the same period. The company's continued growth counters an industrywide trend that showed a near 14 percent drop in farm equipment sales during 1991.

According to Pavel Zakharov, BMI's vice president of finance, BMI closed 1991 with record sales of nearly 4,000 new tractors in the United States last year, representing sales of $31 million and a growth of 20 percent over 1990.

(See BRIEFS, pg. 3)

Fresno Equipment Company's John Horn has watched the farm machinery scene around Five Points, Calif. evolve from big field crop tractors to John Deere 2755 "mudders" for slow-moving use in vegetables.

Hello Mudder!

Vegetable Shift Makes Small Tractors Popular

By DAN BRYANT

JOHN "Red" Horn, sales representative at Fresno Equipment Company at Five Points, Calif., has seen many changes during his career with farm machinery, but the most recent is a shift to smaller, "mudder" tractors by cost-driven growers taking up vegetable crops over the past 10 years.

Horn, a veteran of a total of 36 years in the business, came to Fresno Equipment in 1974 after previous experience with Allis-Chalmers and International dealerships in Fresno County. Fresno Equipment, a leading John Deere dealer established in 1958, is headquartered in Fresno and operates the Five Points store to serve the vast acreage of the county's west side.

"When I started with this company, the farming around here was mainly cotton, wheat, barley, and safflower. Processing tomatoes were just beginning to appear. We sold mostly 110-, 120-, and 150-horsepower on up tractors to pull 6- and 8-row implements, and we sold harvesters and combines," he recalled.

(See MUDDER, pg. 22)

BRIEFS
(From pg. 1)

Zakharov says BMI tractor sales have increased an average of 52 percent per year from 1986 through 1991. While the company has generated about $140 million in total U.S. sales since entering the market in 1976, more than $92 million came in the last four years, representing about 375 percent growth in that period. □

SWEEPSTER Buys FNH Leaf Loader Line

SWEEPSTER, Inc. has reached agreement with Ford New Holland, Inc. to purchase Ford's Model 710 Leaf Loader product line. Calling it a "strategic growth acquisition," SWEEPSTER vice president Jim Barden said the move "solidifies our place in the fast growing waste recycling industry." The agreement calls for a purchase of all machines and parts inventory along with all tooling, patents and documentation. Financial details of the agreement were not released.

The Model 710 Leaf Loader is a diesel-powered machine towed by a dump truck. A beater and brush in combination lift the leaves off the street and feed them to a thrower. The leaves are then blown into the truck. □

Associations To Form Mid-America Equipment Retailers Association

The Indiana Implement Dealers Association and Kentucky Farm and Power Equipment Dealers Association will merge, effective July 1, 1992 to form the Mid-America Equipment Retailers Association serving the outdoor power, farm, industrial and construction equipment retailers in Indiana and Kentucky.

Headed by Executive Vice President David C. Lucy, Mid-America Equipment Retailers Association will represent over 600 members in the two state area. □

Kubota Tractor Corporation Recognizes Top Dealers

Kubota Tractor Corporation (KTC) announced its top dealers in retail tractor sales for 1991 at an annual awards trip to Nassau, Bahamas. The top dealerships receiving the prestigious award are part of KTC's 1,000-member national dealer network.

The top ten Kubota dealerships for 1991 include: Middlefield Farm & Garden, Middlefield, Ohio; Moen Machinery Co., Gresham, Ore.; Rogers Auto Parts Inc., Piedmont, S.C.; Sun Tractor Inc., Ocala, Fla.; Sound Tractor Co., Everett, Wash.; Mt. Airy Tractor Co. Inc., Mount Airy, N.C.; Daniel Implement Co. Inc., Frisco, Texas; Zimmerer Kubota & Equipment Inc., Dallas, Texas; Ginop Sales Inc., Alanson and Williamsburg, Mich.; and N.J. Richardson & Sons Inc., Woodbine, Md. □

U.S. - UNIT RETAIL SALES

Equipment	March 1992	March 1991	% Change	January-March 1992	January-March 1991	% Change	February 1992 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	3,358	2,884	16.4	6,477	6,073	(6.7)	31,635
40 & Under 100 HP	3,208	3,320	(3.4)	7,240	7,195	0.6	22,007
100 HP & Over	2,055	2,972	(30.9)	4,901	5,630	(12.9)	12,989
Total 2-Wheel Drive	8,621	9,176	(6.0)	18,618	18,898	(1.5)	66,631
Total 4-Wheel Drive	340	412	(17.5)	700	776	(9.8)	2,178
Total Farm Wheel Tractors	8,961	9,588	(6.5)	19,318	19,674	1.8	68,809
Combines:							
(Self-Propelled)	487	584	(16.6)	1,401	1,654	(15.3)	5,395

These data are, in part, estimates which are subject to revisions when final detail data become available. Because of the seasonal nature of the industry comparisons of monthly data from one period to another should be done with extreme caution. These data represent most, but not all, of the manufacturers in each product category being sold at retail in the fifty states and the District of Columbia.

U.S. - UNIT RETAIL SALES

Equipment	April 1992	April 1991	% Change	January-April 1992	January-April 1991	% Change	March 1992 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	3,979	4,457	(10.7)	10,366	10,530	(1.6)	31,029
40 & Under 100 HP	3,388	3,473	(2.4)	10,597	10,668	(0.7)	21,987
100 HP & Over	1,357	2,311	(41.3)	6,256	7,941	(21.2)	12,995
Total 2-Wheel Drive	8,724	10,241	(14.8)	27,219	29,139	(6.6)	66,011
Total 4-Wheel Drive	285	534	(46.6)	984	1,310	(24.9)	2,349
Total Farm Wheel Tractors	9,009	10,775	(16.4)	28,203	30,449	(7.4)	68,360
Combines:							
(Self-Propelled)	308	644	(52.2)	1,709	2,298	(25.6)	5,681

U.S. - UNIT RETAIL SALES

Equipment	May 1992	May 1991	% Change	January-May 1992	January-May 1991	% Change	April 1992 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	4,092	5,037	(18.8)	14,465	15,567	(7.1)	30,147
40 & Under 100 HP	3,027	4,152	(27.1)	13,730	14,820	(7.4)	22,875
100 HP & Over	868	1,983	(56.2)	7,136	9,924	(28.1)	13,523
Total 2-Wheel Drive	7,987	11,172	(28.5)	35,331	40,311	(12.4)	66,545
Total 4-Wheel Drive	194	466	(58.4)	1,178	1,176	(33.7)	2,141
Total Farm Wheel Tractors	8,181	11,638	(29.7)	36,509	42,087	(13.3)	68,686
Combines:							
(Self-Propelled)	205	1,308	(84.3)	1,920	3,606	(46.8)	5,924

Canada Report
Retail Sales In Units

EQUIPMENT	April 1992	April 1991	% Chg.	April/Ytd 1992	April/Ytd 1991	% Chg.
FARM WHEEL TRACTORS:						
2WD under 40 H.P.	280	272	2.9%	663	637	4.1%
2WD 40-99 H.P.	516	689	-25.1%	1,552	1,669	-7.0%
2WD 100 H.P. & Over	229	241	-5.0%	824	685	20.3%
Total 2WD	1,025	1,202	-14.7%	3,039	2,991	1.6%
Total 4WD	128	169	-24.3%	393	371	5.9%
TOTAL FARM WHEEL TRACTORS:	1,153	1,371	-15.9%	3,432	3,362	2.1%
COMBINES:						
Self Propelled	34	45	-24.4%	231	156	48.1%
BALERS:						
Rectangular Balers	37	30	23.3%	111	108	2.8%
Round Balers	170	136	25.0%	432	371	16.4%
SWATHERS:						
Self Propelled	12	16	-25.0%	54	36	50.0%
Pull Type	43	10	330.0%	260	36	622.2%
FORAGE HARVESTERS:						
Shear Bar Type	33	40	-17.5%	101	95	6.3%
MOWER CONDITIONERS:	110	149	-26.2%	388	387	0.3%

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EDITORIAL
Hembree Brandon, Editorial Director
H. Scott McClure, Managing Editor

CIRCULATION
Send change of address forms and circulation inquiries to:
Implement & Tractor
P.O. Box 1420
Clarksdale, Mississippi 38614

ADVERTISING
Darrah Parker, Production Manager
P.O. Box 1420
Clarksdale, Mississippi 38614
Telephone: 601/624-8503

John Montandon, Publisher
2516 Via Tejon, Suite 216
Palos Verdes Estates, California 90274
Telephone: 310/373-0318
Fax: 310/375-0834

John Sims
114½ East Pearl Street
Granbury, Texas 76048
Telephone: 817/573-5731
Fax: 817/573-7051

Mike Gonitzke
307 Green Street #5
Gainesville, Georgia 30501
Telephone: 706/535-1593
Fax: 706/287-7205

Midwestern and Eastern Advertising Representative:
Thompson & Associates, Inc.
20 N. Wacker Dr., Suite 1221
Chicago, Illinois 60606
Telephone: 312/726-1020
Fax: 312/726-1380

Stockwell/Midwest
1900 Erie, Suite 203
North Kansas City, Missouri 64116
Telephone: 816/587-7484
Fax: 816/741-1925
Ray Stockwell

Haruki Hirayama
EMS, Inc.
Room 801, Shinjuku Komuro Bldg.
4-1-22, Shinjuku, Shinjuku-Ku
Tokyo 160 Japan
Phone: (03) 350-5666
Cable: EMSINCPERIOO Tokyo
Telex: 2322520 EMSINC J

ADMINISTRATION
John L. Montandon, Publisher
David Whaley, General Manager

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New directions in marketing

MPLEMENT RACTOR

The Business Magazine of the Agricultural, Industrial & Outdoor Power Equipment Industry

VOLUME 107, NO. 5 PRICE $ 2.50 AUGUST/SEPTEMBER 1992

ONE ON ONE time with a customer, explaining the benefits of the equipment he has to offer, helps Dick Johnson, right, sell farm and industrial equipment even during tough economic times.

Product, service and not price top dealer approach

By JIM HUDSON

Don't try price shopping at Elliott Implement Co. Inc. in Whiteville, N. C. That's not the way owner and primary salesman Dick Johnson does business.

"Dealers have taught people to call up and ask for the price," says the Massey Ferguson and New Holland dealer. "Some may not know their equipment well enough so they can sell anything other than price. That's not the way we do business here. I resist telling anyone the price until I show them the features and benefits and the value of the equipment to them. How can they know what it's worth to them until they see what it can do?

"I fully believe the reason most dealers are not profitable is they refuse to sell product and service and try to sell price. I wish more dealers would get smart enough to learn it's up to us to decide whether or not we are going to make a profit."

Johnson has developed his ideas on selling farm equipment through more than a decade as a farm equipment dealer, following a successful career with Massey Ferguson. He held several positions with Massey Ferguson which put him in touch with dealers all over North America, ending his industry career as director of sales for the eastern half of North America. He became an individual dealer as a partner in Elliott Implement more than a decade ago. At the death of the original owner he bought out the remainder of Elliott Implement and Kenansville Tractor Company. His two sons, Ron and Richard Jr., have joined him in the dealerships.

"I have my own definite ideas about farm machinery salesmen," Johnson says. "The No. 1 thing I see is that salesmen do not know the features and benefits of the products they are trying to sell. They haven't taken the time to learn the machines.

(See DEALER, Page 6)

Power Equipment Expo huge success

By SCOTT MCCLURE

It's appropriate that the International Lawn, Garden and Power Equipment Expo share the same home as the Kentucky Derby.

Like race horses pounding around a muddy Churchill Downs track, equipment manufacturers come to Louisville every year to vie for front-runnier status, setting the pace with new product introductions and customer incentive programs.

Many hope to obtain an advantage by showcasing their emphasis on trends impacting the industry. And the 1992 version of EXPO was no exception, with hot topics like environmental sensitivity and economic efficiency dominating talk at the indoor booths, and mulching mowers and chipper/shredders taking center stage in the outdoor exhibition area.

At the same time, the needs of the commercial outdoor power equipment user remained a mainstay of EXPO 92, with new, higher hp units offering operator comfort, improved performance, reduced noise levels and lower emissions. .

Overall almost 25,000 persons registered for this year's International Lawn, Garden and Power Equipment Expo, with 556 companies exhibiting products. EXPO, sponsored by the Outdoor Power Equipment Institute , was recently named as the second largest trade show in the United States.

Among the companies making introductions at EXPO 92 were:

(See MANUFACTURERS, Page 8)

Property control checklist—

(Continued from Page 3)

ments vary with the size and nature of each individual enterprise. Basically there are some things that should be considered if you decide to install a program for your firm.

Property control checklist:

Step 1—Decide what is desired from your property records and what functions are to be served.

A: Physical control:

Identification, location, custody, maintenance and repairs.

B. Tax accounting:

Original cost data, depreciation method used, determination of reserve ratios.

C. Management accounting:

Verify asset values, accounting allocations for cost accounting or tax preparation.

D. Fire and theft insurance:

Replacement Cost (new), adjusted replacement cost (actual cash value) segregations of exclusions from coverage, evidence of value for filing of claims.

E. Plan for capital expenditures (near & long term):

Tax considerations for depreciation, general considerations (moving, etc.), equipment leasing.

Step 2 —List all of the desirable property facts for each item or asset.

A. Equipment numbers (simple, easy system).

B. Description of assets.

C. Location.

D. Date of purchase.

E. Initial cost plus installation costs.

F. Depreciation reserve.

G. Unrecovered cost.

H. Estimated remaining life.

I. Investment credit (carryover-unused).

J. Depreciation method.

K. Depreciation provision.

L. Classify by asset category.

Step 3—Plan method of collecting property facts. Generally this boils down to deciding whether to use company personnel on regular working hours, on overtime, or bringing in outside help.

Step 4 — Decide best method of compiling data for implementation of program, and choose uniform recording forms.

Stock forms are available from commercial stationers, but a special form tailored to your needs can have certain advantages.

A simple card file may be adequate for a small or medium size organization. Larger groups, or those with good data processing ability, may find a computer database works best. All electronic records should be backed up with written records and floppy disks to avoid loss of data through accidental erasure.

Large or small, simplicity should be the rule. Record only essential information. Make it complicated and you'll most likely get break-downs in the system.

Use a separate form for each asset, individual or group. Make as many duplicates as deemed necessary. The original should be maintained in the controlling office, filed in straight numerical sequence according to tag number. Duplicates should be kept in a safe place outside the business location, so they won't be destroyed in a fire or flood.

"The best numbering system is a sequence of consecutive serial numbers."

Duplicates can be kept in the departments or branches of large firms, in safe-deposit box or at accountant's office for smaller firms.

Having a number assigned to an item for its life provides the necessary link between (1) the asset and (2) property records. Success depends on the adoption and maintenance of a good code numbering system. Note that manufacturers' serial numbers are not practical as item control numbers because they lack order or uniformity. They are frequently inaccessible, and some equipment may not have such a number.

Several coding systems are in common use in business and industry.

Regardless of the type of equipment or its location, the best (and least confusing) numbering system is a sequence of consecutive serial numbers. Sequence systems can code an unlimited number of items with the fewest possible digits. The purpose of a property control tag is to assign a control number to the asset. This is the necessary and important link in a profitable PCP. The tag is the critical link between the item and the record form.

Tags should be systematically mounted. It is desirable to establish standard practices for uniform mounting locations on similar types of equipment.

Several types of property control tags are available. In buying tags, the following factors should be considered:

— They should be permanent, and difficult or impossible to remove, to deter theft and accidental loss.

— Indented numbers are a good choice for machines. They are difficult to deface or alter, and can't be painted out. When stamped deeply into metal, they leave behind a "ghost image" that can still be detected with special equipment.

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EDITORIAL
Jim Hudson, Editor
1306 Annapolis Dr., Room 105, Raleigh, N.C. 27608. Telephone: 919/834-6938.

Hembree Brandon, Editorial Director
Bob Frazer, Managing Editor

CIRCULATION
Send change of address forms and circulation inquiries to: Implement & Tractor, P.O. Box 1420, Clarksdale, Mississippi 38614.

ADVERTISING
Judy Flowers, Advertising Manager
Darrah Parker, Production Manager
P.O. Box 1420, Clarksdale, Mississippi 38614. Telephone: 601/624-8503.

John Montandon, Publisher
2516 Via Tejon, Suite 216, Palos Verdes Estates, California 90274. Telephone: 310/373-0318. Fax: 310/375-0834.

John Sims
114-1/2 East Pearl Street, Granbury, Texas 76048. Telephone: 817/573-5731. Fax: 817/573-7051.

Mike Gonitzke
307 Green Street, Gainesville, Georgia 30501. Telephone: 404/535-1593. Fax: 404/287-7205.

Midwestern and Eastern
Advertising Representative:
Thompson & Associates, Inc., 20 N. Wacker Drive, Suite 1221, Chicago, Illinois 60606. Telephone: 312/726-1020. Fax: 312/726-1380.

Stockwell/Midwest
Ray Stockwell
1900 Erie, Suite 203, North Kansas City, Missouri 64116. Telephone: 816/587-7484. Fax: 816/741-1925.

Haruki Hirayama
EMS, Inc.
Room 801, Shinjuku Komouro Bldg.
4-1-22, Shinjuku, Shinjuku-Ku
Tokyo 160 Japan
Telephone: (03) 350-5666.
Cable: EMSINCOERIOO Tokyo
Telex: 2322520 EMSINC J.

ADMINISTRATION
John L. Montandon, Publisher
David Whaley, General Manager

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Canada Report
Retail Sales In Units

EQUIPMENT	1992	1991	May % Chg.	1992	1991	May/Ytd. % Chg.
Farn Wheel Tractors:						
2WD under 40 H.P.	329	390	-15.6%	993	1,027	-3.3%
2WD 40-99 H.P.	547	626	-12.6%	2,108	2,295	-8.1%
2WD 100 H.P. & Over	241	379	-36.4%	1,065	1,064	0.1%
Total 2WD	1,117	1,395	-19.9%	4,166	4,386	-5.0%
Total 4WD	149	299	-50.2%	542	670	-19.1%
Total Farm Wheel Tractors:	**1,266**	**1,694**	**-25.3%**	**4,708**	**5,056**	**-6.9%**
Combines:						
Self Propelled	55	171	-67.8%	286	327	-12.5%
Balers:						
Rectangular Balers	52	56	-7.1%	162	164	-1.2%
Round Balers	137	203	-32.5%	577	574	0.5%
Swathers:						
Self Propelled	20	38	-47.4%	78	74	5.4%
Pull Type	20	17	17.6%	280	53	428.3%
Forage Harvesters:						
Shear Bar Type	23	36	-36.1%	124	131	-5.3%
Mower Conditioners:	**110**	**184**	**-0.5%**	**573**	**571**	**0.4%**

U.S. - UNIT RETAIL SALES

Equipment	June 1992	June 1991	% Change	January-June 1992	January-June 1991	% Change	May 1992 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	4,264	4,988	(14.5)	18,758	20,555	(8.7)	28,265
40 & Under 100 HP	3,763	4,161	(9.6)	17,507	18,981	(7.8)	22,612
100 HP & Over	1,000	1,916	(47.8)	8,133	11,840	(31.3)	14,035
Total 2-Wheel Drive	**9,027**	**11,065**	**(18.4)**	**44,398**	**51,376**	**(13.6)**	**64,912**
Total 4-Wheel Drive	**194**	**402**	**(51.7)**	**1,372**	**2,178**	**(37.0)**	**2,196**
Total Farm Wheel Tractors	**9,221**	**11,467**	**(19.6)**	**45,770**	**53,554**	**(14.5)**	**67,108**
Combines (Self-Propelled)	508	1,165	(56.4)	2,426	4,771	(49.2)	6,307

U.S. - UNIT RETAIL SALES

Equipment	July 1992	July 1991	% Change	January-July 1992	January-July 1991	% Change	June 1992 Inventory N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	2,960	3,911	(24.3)	21,784	24,466	(11.0)	-
40 & Under 100 HP	3,271	3,093	5.8	20,792	22,074	(5.8)	-
100 HP & Over	728	943	(22.8)	8,856	12,783	(30.7)	-
Total 2-Wheel Drive	**6,959**	**7,947**	**(12.4)**	**51,432**	**59,323**	**(13.3)**	-
Total 4-Wheel Drive	**132**	**209**	**(36.8)**	**1,504**	**2,387**	**(37.0)**	-
Total Farm Wheel Tractors	**7,091**	**9,156**	**(13.2)**	**52,936**	**61,710**	**(14.2)**	-
Combines (Self-Propelled)	529	538	(1.7)	2,955	5,309	(44.3)	-

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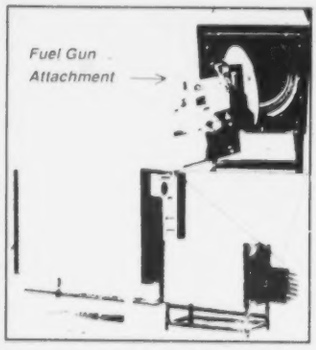

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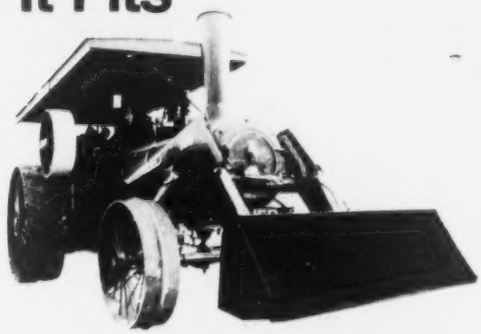

Just about any make or model of tractor can be matched to a better value Allied Loader. If your customer doesn't want others to notice how much he's saved by purchasing an Allied Loader, we are pleased to provide factory matched custom paint. Do your customers and your dealership a favour; get the details on Allied quality and value today.

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Winnipeg, Manitoba R2C 3B2
Ph. 204-661-8711
Fax 204-654-2503

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Canada Report
Retail Sales In Units

EQUIPMENT	June 1992	June 1991	% Chg.	June/Ytd. 1992	June/Ytd. 1991	% Chg.
Farn Wheel Tractors:						
2WD under 40 H.P.	296	390	-24.1%	1,294	1,417	-8.7%
2WD 40-99 H.P.	663	666	-0.5%	2,780	2,961	-6.1%
2WD 100 H.P. & Over	254	325	-21.8%	1,302	1,389	-6.3%
Total 2WD	1,213	1,381	-12.2%	5,376	5,767	-6.8%
Total 4WD	116	174	-33.3%	657	844	-22.2%
Total Farm Wheel Tractors:	1,329	1,555	-14.5%	6,033	6,611	-8.7%
Combines:						
Self Propelled	90	161	-44.1%	376	488	-23.0%
Balers:						
Rectangular Balers	180	188	-4.3%	343	352	-2.6%
Round Balers	575	638	-9.9%	1,158	1,212	-4.5%
Swathers:						
Self Propelled	98	61	60.7%	176	135	30.4%
Pull Type	136	39	248.7%	416	92	352.2%
Forage Harvesters:						
Shear Bar Type	91	87	4.6%	215	218	-1.4%
Mower Conditioners:	720	763	-5.6%	1,294	1,334	-3.0%

Reliance offers kits

Reliance Parts Corp. now offers a complete assortment of overhaul kits for John Deere 300, 400 and 500 series diesel engines.

Available as both "in-frame" and "major" versions for all applications, Reliance overhaul kits are complete kits, including parts not normally provided by other suppliers. In-frame overhaul kits, for servicing the engine without removing it from the vehicle, contain oil pan gaskets and connecting rod capscrews in addition to cylinder kits and other standard replacement parts. Major overhaul kits, (where the engine is removed for servicing) include extras such as a complete overhaul gasket set, front and rear crankshaft seals, connecting rod bushings, connecting rod capscrews and camshaft or balancer shaft bushings (where applicable).

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W.H.O.

(Continued from Page 15)

tor lift and elevator fold are all hydraulically operated. Electronic sensor produces smooth continuous grinding even in dense or tough material. The cylinder is 43 inches long and 25 inches in diameter with hammers extended. Fifty-four free swinging hammers are standard (up to 108 possible). The elevator is extra tall, 26 feet long, and has a cleated belt. A radiator screen, filter precleaner and engine hood are standard equipment.

The P8-43 Portable Hay Grinder is built to the same standards of performance and dependability W.H.O. has been building into grinders for the past 45 years.

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AMERICA'S NO. 1 "ALL MAKES" PARTS SOURCE FOR FARM EQUIPMENT DEALERS

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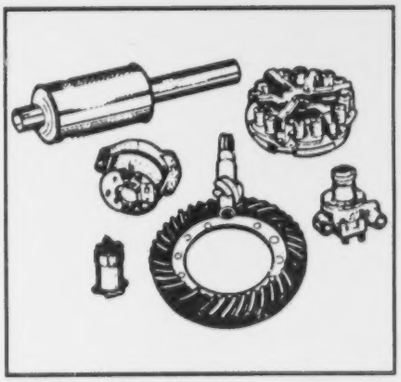
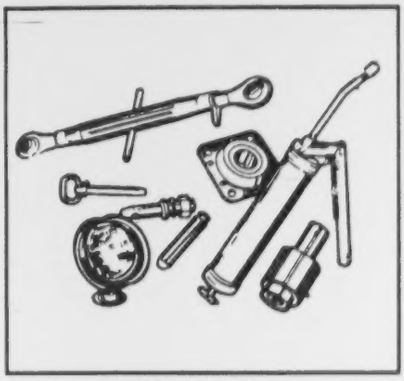
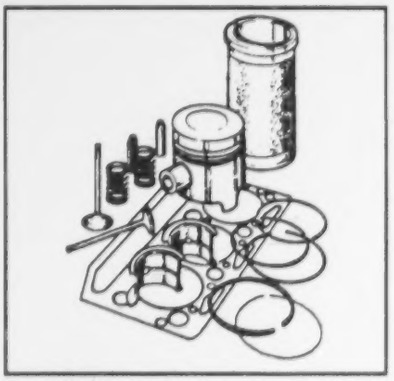


■ TRACTOR PARTS
■ COMBINE PARTS



■ IMPLEMENT PARTS
■ CUTTER BAR PARTS
■ BEARINGS



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